

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII**

In the Matter of the Application of )  
 )  
MAUI ELECTRIC COMPANY, LIMITED )  
 )  
For Approval of Rate Increases and )  
Revised Rate Schedule and Rules )  
\_\_\_\_\_ )

Docket No. 2006-0387

**MECO  
2007 TEST YEAR**

**PARTIAL CONFIDENTIAL  
(IN SEALED ENVELOPE)**

**MECO Responses to  
CONSUMER ADVOCATE  
Information Requests**

**Book 4 of 6**

**October 30, 2007**

CA-IR-166

**Ref: MECO T-9, page 105 (Pension Asset).**

In discussing pension asset accounting under FAS87 and FAS158, MECO T-9 states, at page 105: "If the Company is not allowed a return on the pension asset in rate base or is not allowed to restore equity for the AOCI for ratemaking purposes, these changes would likely negatively impact the total debt/total capital and funds from operations interest coverage ratios. As discussed further by Ms. Sekimura in section T-17, if the Company is denied either aspect of regulatory support, it would result in lower operating income. Further, this regulatory treatment would presumably be applied to HECO and HELCO which would also result in lower operating income at HECO and HELCO. The consolidated impact of this lack of regulatory support would result in credit quality degradation, which could result in higher cost of capital." Please provide the following:

- a. Has MECO quantified what it believes is the negative impact on total debt/total capital and funds from operations interest coverage ratios that would result if the pension asset were excluded from rate base? Please explain and provide a copy of any supporting documentation.
- b. Has MECO quantified what it believes is the negative impact that would result if it is not allowed to restore equity for the AOCI for ratemaking purposes? Please explain and provide a copy of any supporting documentation.

**MECO Response:**

- a. MECO has not quantified the negative impact. As indicated in the Companies' (i.e., HECO, HELCO and MECO) response to CA-SIR-3(a) in Docket No. 05-0310 which was filed on November 17, 2006, the exclusion of the pension asset from rate base would negatively impact the funds from operations interest coverage ratio. If the pension asset is excluded from rate base, the Company's credit quality will deteriorate and financing costs will increase as a result of lower credit quality; the negative impact, however, cannot be easily measured.

On the other hand, rate base treatment of the pension asset would not be expected to have an affect on the total debt/total capital ratio.

- b. MECO has not quantified the negative impact. All other things remaining constant, if MECO is not allowed to restore equity for the AOCI charge for ratemaking purposes, although the result would be lower operating income, which would result in credit quality degradation, which could result in a higher cost of capital, such negative impacts are not easily measured.

CA-IR-167

**Ref: MECO T-9, page 97 (Pension Asset).**

At line 15 of page 95, MECO T-9 states: "The estimated pension asset balances as of December 31, 2006 and 2007 represent the net of the cumulative investor supplied fund contributions in excess of the cumulative previously recognized pension cost." Please provide the following:

- a. Please define "investor supplied funds" as used in this context.
- b. Please identify each specific transaction in which MECO's investors provided the Company with specific funds that were contributed to the pension fund. If none, please so state.

**MECO Response:**

- a. The phrase "investor supplied funds" means funds provided by the investors, as compared to amounts provided by ratepayers or other entity, such as the government.
- b. Payments made to the pension fund were from the same sources of funds that MECO would use to make any investment. There were no special contributions from any source. Please see also MECO T-9, page 102, lines 3-15.



CA-IR-168

**Ref: MECO T-9, page 98 (Pension Asset).**

At page 98, MECO T-9 generally describes the circumstances giving rise to the prepaid pension asset, including the following excerpt from lines 12-18: "From 1995 through 1998, because MECO generally funded the primarily declining NPPC, the pension asset balance was not significant. Beginning in 2000 and continuing through 2002, MECO began experiencing negative NPPC accruals. Therefore, although no fund contributions were made in those years, the pension asset grew significantly. In addition, as stated earlier, MECO made fund contributions in 2003 and 2004 that were significantly more than the NPPC, further increasing the pension asset balance." The following also appears at page 98, lines 20-23: "Even though the negative NPPC accruals in the period 2000 through 2002 increased the pension asset significantly during these years, ERISA prohibited MECO from taking cash refunds from the pension fund. Funds contributed to the pension fund must stay in the pension fund (except under special circumstances such as plan termination)." Please provide the following:

- a. At any time during the period 2000 through 2002, did MECO implement any reductions to its tariff rates to flow the negative pension costs through to the benefit of its regulated customers?
  1. If so, please identify each docket and decision in which such rate reductions were implemented.
  2. If not, please so state.
- b. At any time during the period 2000 through 2002, did MECO implement any refunds designed to flow the negative pension costs through to the benefit of its regulated customers?
  1. If so, please identify each docket and decision in which such customer refunds were implemented.
  2. If not, please so state.

**MECO Response:**

- a. During the 2000 through 2002 time period, MECO did not implement any reductions to its tariff rates as a result of negative pension costs. At the same time, MECO did not implement any increases to its tariff rates to flow through increases in expenses (other than those allowed through the ECAC or IRP surcharge) since its tariff rates were set.

- b. During the 2000 through 2002 time period, MECO did not implement any refunds as a result of negative pension costs. At the same time, MECO did not implement any rate increases (other than those allowed through the ECAC or IRP surcharge) to flow through increases in expenses.

CA-IR-169

**Ref: MECO T-9, page 99 (Pension Asset).**

Beginning at line 1 of page 99, the following excerpt within MECO T-9's general discussion of the circumstances giving rise to the prepaid pension asset: "Thus, even though MECO's contributions to the pension fund generally matched the NPPC in earlier years, MECO could not take cash from the pension fund to match the negative NPPC accruals in 2000 through 2002."

Please provide the following:

- a. Did MECO provide any cash to ratepayers to match the negative NPPC accruals in 2000 through 2002?
- b. If the response to part (a) is affirmative, please provide a detailed explanation of such cash flows to ratepayers and provide copies of all supporting documents.
- c. If the response to part (a) is negative, please so state.

**MECO Response:**

- a. MECO did not provide any cash to ratepayers to match the negative NPPC accruals in 2000 through 2002.
- b. N/A.
- c. See response to part (a).

CA-IR-170

**Ref: MECO T-9, page 102 (Pension Asset).**

The referenced testimony discusses the Company's rationale for including the prepaid pension asset in rate base. Beginning at line 4 of page 102, MECO T-9 states:

Payments made to the pension fund were from the same sources of funds that MECO would use to make any investment; therefore, the cumulative fund contributions were provided by investors. There were no special contributions from any source. Ratepayers do not fund Company investments. Rather, they pay for services and those payments are recorded as revenues. Investor funds are used to fund the pension plan just as investor funds are used to construct or purchase the gross plant assets. Investors contributed \$27.0 million to the pension plan for the period 1987 to 2005 (see MECO-928 page 1).

Please provide the following:

- a. Please confirm that MECO T-9 concurs that the HPUC establishes utility rates and charges that are cost-based, as determined by the test year employed in periodic rate proceedings. If this cannot be confirmed, please explain.
- b. Please confirm that the revenues MECO collects from utility customers for the services provided are a product of customer usage and the cost-based utility rates. If this cannot be confirmed, please explain.
- c. Please confirm that the revenue MECO collects from its tariff customers does provide the Company with a source of cash flow from utility operations. If this cannot be confirmed, please explain.

**MECO Response:**

- a. The overall level of rates in a rate case is set based on normalized costs (or cost estimates), including the cost of capital, for a test period. Rate proceedings are not necessarily "periodic". They may be initiated by utilities when total costs (or expected costs) exceed total revenues (or expected revenues). They may be initiated by regulators when total revenues (or expected revenues) exceed total costs (or expected costs). Specific utility rates and charges established by the Commission may not be cost-based. For public policy

or other reasons, the Commission has in the past approved utility rates and charges that were not cost-based.

- b. MECO concurs that revenues collected from utility customers are for services provided.

The amount collected may not necessarily be based on the product of customer usage and the cost-based utility rates, as revenues maybe collected for services such as service establishment, revenues from other operating revenues, etc.

- c. The revenue that MECO collects from its tariff customers for the utility services it provides does provide the Company with a source of cash flow.



CA-IR-171

**Ref: MECO T-9, page 104, & MECO-928 (Pension Asset).**

One of the ratepayer benefits identified by MECO T-9, at page 104, is that "[t]he negative accruals of the past are negative costs that reduced expenses and lowered revenue requirements, which in turn helped make it unnecessary for MECO to apply for a general rate increase for the seven-year period from 2000 through 2006." Please provide the following:

- a. Please identify each planned application for a rate increase MECO avoided as a result of the negative NPPC.
- b. Please confirm that reductions in other operating expenses or increases in operating revenues between rate cases would also help make it unnecessary for MECO to apply for a general rate increase during the referenced seven-year period. If this cannot be confirmed, please explain.
- c. Please confirm that, in setting utility rates, the HPUC considers all revenue, expense, investment and capital components within a forecasted test year for each filed rate case. If this cannot be confirmed, please explain.
- d. Referring to part (a) above, please provide a copy of all existing documentation demonstrating that the existence of negative NPPC allowed MECO to avoid a rate increase during the referenced seven-year period.

**MECO Response:**

- a. In determining whether MECO will file a rate increase application, MECO considers, among other things, the estimated kilowatt-hour sales, revenues and expenses, investment in assets, and earnings requirements for the Company. The estimated pension expense would be considered in making that determination.

The purpose of a rate case is to reset rates, not to reset the components of revenue requirements that were last used to set rates. For example, consider a situation in which rates are set when the NPPC accrual is negative, and the NPPC accrual becomes positive in subsequent years. A utility would not be able to claim that it was under-recovering its

NPPC accrual, and should be allowed to increase its rates, if it was still able to earn a fair return.

A regulatory commission's task in a ratemaking proceeding "is to set rates which are just, reasonable, and nondiscriminatory. In discharging that task, the commission determines how much revenue the utility requires. This, in turn, leads to a determination of a fair rate of return as one component of a revenue requirement. The commission then sets rates to produce that required revenue. Once set, those rates are 'the lawful rates,' are the only rates which may be charged by the utility, and are '... prima facie reasonable until finally found otherwise in an action brought for that purpose.'" Potomac Electric Power Co., 83 P.U.R.3d 113, 147 (D.C. P.S.C. 1970), quoted in Consumer Advocate v. Young Brothers, Ltd., Docket No. 5140, Decision and Order No. 8686 (March 21, 1986), pages 7-8, 10-11 (in which the Commission rejected a claim that an earned rate of return in excess of the return deemed reasonable in the utility's last rate case was per se excessive.) See Decision and Order No. 16710, issued November 19, 1998 in Docket No. 97-0073 ("D&O 16710"), page 3.

The Company files reports pursuant to Commission rules and orders showing results of operations on a 12-month trailing basis, from which the Commission can determine whether a more formal rate investigation is warranted.

Financial planning (which includes the possible filing of a rate case application to increase revenues) involves consideration of all factors that affect revenue requirements, just as rate cases consider all factors that affect revenue requirements. As a result, there is no internal document stating that MECO did not have to file a rate case because of the negative NPPC accruals.

However, the large negative accruals from 2000-2002 were certainly a substantial factor in avoiding the need for a rate increase filing. (Changes in the NPPC accrual amounts, before transfers to capital and other, are shown in MECO-928, page 1.)

Subsequent to 2002, however, the NPPC accrual amount substantially increased, but MECO was still able to avoid a rate increase application, primarily due to sales increases.

- b. See response to part (a).
- c. In establishing MECO's rates in a rate case, the Commission normally considers all revenue, expense, rate base and capital components for a test period as determined in a rate case. However, there may be instances when certain revenues, expenses and/or rate base items are excluded from the test year and thus are not considered in the establishment of the utility's rates in a rate case proceeding, and recovery of such costs are considered outside of a rate case proceeding. The Commission also establishes utility rates outside of rate case proceedings. Some examples include establishing rates for new services, rebalancing rates that achieve a revenue neutral outcome and establishing or revising certain surcharges. In such cases the Commission may not consider all revenue, expense, investment and capital components within a forecasted test year.
- d. See response to part (a).

CA-IR-172

**Ref: MECO T-9, page 104 (Pension Asset).**

The referenced testimony discusses the Company's rationale for including the prepaid pension asset in rate base. Beginning at line 24 of page 104, MECO T-9 states: "In addition, some of the negative NPPC was transferred to construction resulting in a lower amount of construction work in progress upon which AFUDC is accrued and thus, lower costs added to rate base." Please provide the following:

- a. For each year since adoption of FAS87 in 1987, please provide the actual percentage of NPPC that was:
  1. Transferred to capital.
  2. Transferred to outside third parties for services rendered.
- b. In each rate case test year since adoption of FAS87 in 1987, please provide the percentage of NPPC that was:
  1. Transferred to capital.
  2. Transferred to outside third parties for services rendered.

**MECO Response:**

- a. See page 2 of this response for the actual percentage of employee benefits transferred to both capital and to outside third parties for 1987 to 2006. Separate percentages for the amounts transferred to capital and to other from 1987 are not easily obtainable.
- b. See response to CA-IR-161.

Maui Electric Company, Ltd.

Actual Employee Benefits transferred percentage

<u>Year</u>	<u>NPPC Accrual</u>	<u>Employee Benefits Percentage Transferred</u>
1987	1,375	24.96%
1988	1,167	28.20%
1989	1,173	23.81%
1990	1,785	21.50%
1991	1,644	20.05%
1992	1,864	20.58%
1993	1,802	26.94%
1994	2,140	27.56%
1995	1,461	27.64%
1996	2,009	22.91%
1997	1,765	22.29%
1998	952	24.20%
1999	591	31.10%
2000	(2,266)	21.30%
2001	(2,279)	16.73%
2002	(1,496)	28.94%
2003	2,127	29.20%
2004	1,016	32.81%
2005	1,745	30.34%
2006	3,210	31.30%



CA-IR-173

**Ref: T-11, page 2, MECO-WP-1103 (Staffing Counts).**

Please provide the following:

- a. Please provide a breakdown of actual staffing in each major area shown on MECO-WP-1103, for each month of 2005 and 2006.
- b. Please provide a breakdown of actual staffing in each major area shown on MECO-WP-1103, for each month of 2007, to-date.

**MECO Response:**

- a. See MECO's response to CA-IR-112, Attachment A, pages 1 and 4.
- b. See MECO's response to CA-IR-112, Attachment A, page 7.

CA-IR-174

**Ref: T-11, page 2, MECO-1103 & MECO-WP-1103 (Staffing Counts).**

Please provide the following

- a. Explain clarify whether MECO's 2007 test year O&M forecast assumes full employment (no vacancies) for each month, as set forth on MECO-1103 and MECO-WP-1103.
- b. If the response to part (a) indicates that the 2007 test year O&M forecast does not assume full employment (no vacancies) throughout 2007, please state the specific vacancy counts or assumptions that are used in the Company's rate filing.
- c. Provide the amounts of any temporary labor or contractor charges that were incurred by MECO to meet work requirement caused by any vacant employee positions in 2005, 2006 or 2007, to-date.

**MECO Response:**

- a. As discussed in MECO T-11, page 2, during MECO's Operating Budget process, each manager establishes the number of employees needed over the budget period. The estimated number of employees for an organization can change from month to month over the budget period. However, for MECO's 2007 test year forecast, managers estimated that the level of resources needed to provide service to its customers would be employed on January 1, 2007, and would be maintained throughout the year.
- b. Please see response to part a.
- c. The temporary labor or contractor charges incurred are shown below:

<u>Contractors</u>	<u>2005</u>	<u>2006</u>	<u>4/30/07</u>
Employer Options	\$16,050	\$20,045	\$12,888
Valley Isle Motors			\$35,547

CA-IR-175

**Ref: MECO-1106 & MECO-624 (Overtime)**

The spreadsheet file underlying MECO-624 contains a link to data in a spreadsheet file titled "MECO-1106-Overtime (as of Jan 07).xls." Please provide this spreadsheet file, with intact cell formulae.

**MECO Response:**

MECO-624 has been updated (please see MECO's response to CA-IR-125). As such, the requested spreadsheet file, MECO-1106-Overtime (as of Jan 07).xls, is no longer applicable and is not being provided. Attachment 1 of the response to CA-IR-125 provides overtime hours and dollars. The Company provided the Excel spreadsheet file for Attachment 1 to the Consumer Advocate on June 8, 2007.

CA-IR-176

**Ref: T-11, page 7, (Recruitment).**

Beginning at page 8, HECO T-14 (Docket No. 2006-0386) describes HECO's hiring and recruitment process, including a discussion of the submission of a Job Vacancy Requisition ("JVR") to Workforce Staffing and Development which begins the recruitment process. Please provide the following:

- a. Does MECO also utilize the JVR process in a manner that is substantially similar to HECO?
- b. Please generally describe the JVR submission and approval process, as used by MECO.
- c. Does MECO require a JVR before the recruitment and hiring process can begin? Please explain.
- d. As of the most current date in 2007, please provide a listing of all unfilled positions included in the 2007 test year forecast by department and RA, indicating whether a JVR has not been submitted and approved.

**MECO Response:**

- a. Yes. MECO's JVR (recruitment) process is substantially similar to HECO's process.
- b. Upon verbal request by the hiring department supervisor, superintendent, or manager, Human Resources prepares a Job Vacancy Requisition (JVR) which is routed for approvals from the department manager and MECO president.
- c. Yes. An approved JVR must be received by Human Resources before a Job Vacancy Notice (JVN) or job posting is posted. (Note: A JVN is not required for positions below the director (facilitator) level.) The recruitment process begins with the posting of a vacancy within the Company, followed by or many times concurrently with postings at MECO's affiliated companies. External recruitment may also take place during the internal and affiliate posting period.

d. See below.

Maui Electric Company, Ltd.  
Open Staffing Positions  
As of June 8, 2007

<u>Department</u>	<u>RA</u>	<u>JVN</u>	<u>Position Title</u>	<u>JVR Submitted and Approved</u>
Administration	MSP	0723	* Employee Relations Administrator	Yes
T&D	MDK	0714	* Lineman	Yes
T&D	MDK	0714	* Lineman	Yes
T&D	MDK	0714	* Lineman	Yes
T&D	MDK	0728	Lineman	Yes
T&D	MDM	0729	Senior Helper	Yes
T&D	MDR	0715	* Dispatcher	Yes
T&D	MDR	0694	Dispatch Supervisor	Yes
Engineering	MWA	0730	Engineering Analyst	Yes
Power Supply	MGE	0722	Instrument & Control Technician I, II, or III	Yes
Power Supply	MGE	0722	Instrument & Control Technician I, II, or III	Yes
Power Supply	MGK	0727	Operator Helper	Yes
Power Supply	MGL	0725	Maintenance Electrician	Yes
Power Supply	MGM	0718	Supervisor, Diesel Operations	Yes

\* Note: Positions have been filled, start dates to occur after June 8, 2007. See also

MECO's response to CA-IR-112, part (b).



CA-IR-177

**Ref: MECO T-13, page 5 - (SUTA Tax Base/Rate for 2007).**

Please provide the following regarding the estimated 2007 SUTA tax rate and base that was used in the Company's filing:

- a. A statement of the State-approved actual base and rate effective for 2007.
- b. A copy of the authority relied upon for your response to part (a) of this information request.

**MECO Response:**

- a. The State Department of Labor and Industrial Relations issued the Company's stand alone contribution rate totaling 0.21% (0.2% contribution rate plus 0.01% employment and training assessment rate) on March 16, 2007. This compares with MECO's test year estimate of 0.61%, which was based on the 2006 contribution rate. The final State-approved base is \$35,300, which is \$400 lower than the estimated base of \$35,700 used for purposes of the test year.
- b. See statements attached as pages 2-4.

STATE OF HAWAII  
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS  
UNEMPLOYMENT INSURANCE DIVISION

MAUI ELECTRIC CO

P O BOX 398  
KAHULUI

HI 96732

ACCOUNT NUMBER 0000050059  
FEIN 99-0047800  
DATE MAILED 03/16/07  
DATE COMPILED 03/12/07  
LIABLE DATE 01/01/56

CONTRIBUTION RATE NOTICE  
FOR CALENDAR YEAR 2007

YOUR CONTRIBUTION RATE AND EMPLOYMENT AND TRAINING ASSESSMENT RATE  
FOR CALENDAR YEAR 2007 ARE LISTED BELOW

CONTRIBUTION RATE 0.200 E & T ASSESSMENT RATE 0.010

THE TABULATION SHOWS ANNUAL TAXABLE PAYROLL AND CONTRIBUTION DATA REPORTED  
ON YOUR QUARTERLY CONTRIBUTION REPORTS FOR 2004, 2005 AND 2006, AND BENEFITS  
CHARGED TO YOUR ACCOUNT FOR 2006.

RESERVE 12/31/05	1108210.16	ANNUAL TAXABLE PAYROLL	
CONTRIBUTIONS +	43941.36	2004	9611625.06
2006 BENEFITS CHARGED	12260.40	2005	10188406.25
-----	-----	2006	10985340.47
RESERVE 12/31/06	1139891.12	-----	-----
		ANNUAL AVG	10261790.59

RESERVE RATIO (RESERVE 12/31/06 / AVERAGE ANNUAL PAYROLL) = 0.1111

CONTRIBUTION RATE SCHEDULE IN EFFECT: B

IF YOU DISAGREE WITH THE RATES ASSIGNED TO YOUR ACCOUNT, THE LAW PROVIDES YOU WITH  
A RIGHT TO APPEAL. PLEASE SUBMIT YOUR REQUEST FOR REVIEW AND REDETERMINATION  
IN WRITING, SETTING FORTH YOUR REASONS, WITHIN 15 DAYS FROM THE DATE OF  
MAILING OF THIS RATE NOTICE.

IF YOU HAVE ANY QUESTIONS REGARDING THE RATE COMPUTATION, PLEASE CONTACT THE  
APPROPRIATE OFFICE WHERE YOUR ACCOUNT IS MAINTAINED.

MAINLAND AND OAHU EMPLOYERS: EMPLOYER SERVICES,  
P.O. BOX 700, HONOLULU, HI 96809-0700 TEL (808) 586-8915  
HAWAII EMPLOYERS:  
1990 KINOOLE STREET, SUITE 101, HILO, HI 96720-5293 TEL 974-4086  
MAUI EMPLOYERS: 54 S. HIGH ST, ROOM 201, WAILUKU, HI 96793-2198 TEL 984-8410  
KAUAI EMPLOYERS: 3100 KUHIO HWY ROOM C-12, LIHUE, HI 96766-1153 TEL 274-3025



STATE OF HAWAII  
Department of Labor and Industrial Relations  
Unemployment Insurance Division

December, 2006

## IMPORTANT NOTICE TO EMPLOYERS

If you have not already submitted all "Quarterly Wage, Contribution and Employment and Training Assessment Reports" and payment for the calendar year 2006, they must be submitted by January 31, 2007.

Failure to submit all reports will result in the assignment of the maximum tax rate of 5.4% for 2007 and you will not be eligible for a tax credit against your Federal Unemployment (FUTA) tax. Your reports must be submitted even if you had no payroll or your tax liability is zero.

### 2007 TAX BASE

The tax base for 2007 will be \$35,300. This means that contributions will be payable on wages up to \$35,300 per employee during the year. The tax base represents 100 percent of the state's average annual wages reported by employers contributing to the unemployment trust fund.

### 2007 MAXIMUM WEEKLY BENEFIT AMOUNT

The maximum weekly benefit amount will be \$475 for claims effective on or after January 1, 2007. It is based on 70% of the state's average weekly wage. The minimum weekly benefit amount is \$5.

### EMPLOYMENT AND TRAINING ASSESSMENT

Each employer with a contribution rate greater than zero and less than 5.4% is liable for an employment and training assessment of .01% on taxable wages. This is a State of Hawaii assessment and this amount cannot be taken as a credit against the Federal Unemployment (FUTA) tax.

### UPGRADE YOUR EMPLOYEES' WORKPLACE KNOWLEDGE AND SKILLS

The Employment and Training Fund (ETF) Program provides 50% tuition assistance (up to \$250 per course) to employers and their employees to upgrade their workforce knowledge and skills through ETF-approved non-credit training courses. For more information, visit the ETF website at [www.hawaii.gov/labor/etf](http://www.hawaii.gov/labor/etf) or contact one of the Workforce Development Division offices.

Honolulu (808) 586-8703	Hilo (808) 981-2860	Kona (808) 327-4770	Waikuku (808) 984-2091	Lihue (808) 274-3056
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### 2007 CONTRIBUTION RATE

"Schedule B" from the multi-schedule rate system will be used to determine your 2007 contribution rate. You will be advised of your contribution rate in March, 2007. Your contribution rate is based upon the ratio of your 2006 reserve balance to your average annual payroll. You can find your 2007 contribution rate by finding the Schedule B tax rate associated with your reserve ratio on the table below. Contribution rates are in percentages.

EMPLOYER'S RESERVE RATIO	SCHEDULE B
.1500 and over	0.0
.1400 to .1499	0.0
.1300 to .1399	0.0
.1200 to .1299	0.1
.1100 to .1199	0.2
.1000 to .1099	0.3
.0900 to .0999	0.5
.0800 to .0899	0.7
.0700 to .0799	0.9
.0600 to .0699	1.1
.0500 to .0599	1.3
.0300 to .0499	1.5
.0000 to .0299	1.9
-.0000 to -.0499	2.3
-.0500 to -.0999	2.7
-.1000 to -.4999	3.1
-.5000 to -.9999	3.6
-1.0000 to -1.4999	4.2
-1.5000 to -1.9999	4.8
-2.0000 and less	5.4

(EXAMPLE: If your reserve ratio is .0501, your 2007 contribution rate is 1.3%)

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### DOING BUSINESS IN HAWAII JUST GOT EASIER

Employers may now file their "Quarterly Wage, Contribution and Employment and Training Assessment Report" - Form UC-B6 - and pay their contributions and assessments over the Internet via the Hawaii Unemployment Insurance (HUI) Express. To get started, just go to <http://hui.ehawaii.gov> to set up your eHawaii Portal account. Download our free and easy-to-use QWRS Software program and register to use HUI Express.

After your registration is approved, you may submit your electronic Form UC-B6 and pay your contributions and assessments via HUI Express. Administrative costs to use this service are waived if payment is made by electronic check.

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FOR MORE INFORMATION CONTACT YOUR NEAREST UNEMPLOYMENT INSURANCE OFFICE.

#### OAHU BRANCH and OUT-OF-STATE EMPLOYERS

830 Punchbowl Street, #437  
Honolulu, HI, 96813  
Ph: (808) 586-8915, 8916  
Fax: (808) 586-8929

#### HAWAII BRANCH

1990 Kinooie Street, Suite 101  
Hilo, HI, 96720-5293  
Ph: (808) 974-4086  
Fax: (808) 974-4085

#### MAUI BRANCH

54 S High Street, #201  
Wailuku, HI, 96793  
Ph: (808) 984-8410  
Fax: (808) 984-8444

#### KAUAI BRANCH

3-3100 Kuhio Highway, Suite 12  
Lihue, HI, 96766-1153  
Ph: (808) 274-3025  
Fax: (808) 274-3046

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PLEASE NOTIFY THE OFFICE OF ANY ADDRESS CHANGE SO FORMS AND CORRESPONDENCE  
WILL REACH YOU IN A TIMELY MANNER.

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CA-IR-178

**Ref: MECO-WP-1301 – (Payroll Tax Calculations).**

Please provide the following:

- a. Copies of underlying reports and documentation supportive of the "Allocation of Payroll Taxes Based on Labor Dollars Charged on page 2.
- b. A comparative analysis of actual total payroll distribution percentages between Capital, Operations, and Other, by NARUC Account, for calendar years 2004, 2005 and 2006.
- c. An explanation of significant changes in the payroll distribution between years, as set forth in your response to part (b) of this information request.
- d. Copies of MECO 2006 Form 941 quarterly reports for comparison to page 3 effective rate calculations.

**MECO Response:**

- a. See pages 2 and 3 of this response. Note that Other Payroll Tax is calculated as follows  
(\$ in thousands):

Total Payroll tax	\$2,025	See page 2
Less: Capital	(351)	See page 2
Less: Operations	<u>(1,378)</u>	See page 2
Other Payroll tax	<u>\$ 296</u>	

- b. See page 4 of this response.
- c. Not applicable. There were no significant changes.
- d. See pages 5-16 of this response.



Maui Electric Company, Ltd.  
Payroll Tax Allocation Worksheet  
Test Year 2007

(\$ In Thousands)

<u>Category</u>	<u>Allocation of Payroll Taxes Based on Forecasted Labor \$</u>				
	<u>Forecasted Labor \$</u>	<u>Alloc Adj</u>	<u>Forecasted Labr \$ Adj</u>	<u>Alloc %</u>	<u>Allocated Payroll Tax</u>
Capital	4,043		4,043	17.31%	351
Billable	69		69	0.30%	6
O & M	15,889		15,889	68.05%	1,378
Other	3,349		3,349	14.34%	290
Clearing	3,171	(3,171)	0	0.00%	0
Total	26,521	(3,171)	23,350	100.00%	2,025 *

\*Note: This schedule will be updated at the next earliest opportunity to reflect changes to allocated payroll tax calculations.

Maui Electric Company, Ltd.  
Labor Forecast

<u>Category</u>	<u>Ind</u>	<u>FY07</u>	<u>Category</u> <u>Totals</u>
Billable	BE	14,846	
Billable	BT	54,416	69,262
Capital	NI	3,514,526	
Capital	NR	528,444	4,042,970
Clearing	NC	3,170,902	3,170,902
O&M	NE	15,785,496	
O&M	NS	103,604	15,889,100
Other	NA	1,585	
Other	ND	3,329,362	
Other	NN	7,455	
Other	NP	10,304	3,348,706
		<u>26,520,940</u>	<u>26,520,940</u>

Maui Electric Company, Ltd.

Allocation of Payroll Taxes Based on Labor Dollars Charged:

(\$ In Thousands)

	<u>2004</u>		<u>2005</u>		<u>2006</u>	
	<u>Labor \$</u>	<u>Alloc %</u>	<u>Labor \$</u>	<u>Alloc %</u>	<u>Labor \$</u>	<u>Alloc %</u>
Capital	403	21.21%	337	18.39%	376	19.86%
Operations	1,222	64.32%	1,283	69.99%	1,336	70.58%
Others	275	14.47%	213	11.62%	181	9.56%
Total Payroll Taxes	<u>1,900</u>	<u>100.00%</u>	<u>1,833</u>	<u>100.00%</u>	<u>1,893</u>	<u>100.00%</u>

KF 99-0047800

GMB No 1545-0028

229

☐ 4: October, November, December

**Part 1: Answer these questions for this quarter.**

- 5 Taxable social security and Medicare wages and tips:**

192030 - 95

- 1852472 . 31

7 TAX ADJUSTMENTS (Read the instructions for line 7 before completing lines 7a through 7h.)

- You **MUST** fill out both pages of this form and **SIGN** it.

Form: 941 (Rev. 1-2006)

960206

Name (not your trade name)  
MAUI ELECTRIC COMPANY, LTD

Employer identification number (EIN)  
99-0047800

**Part 2: Tell us about your deposit schedule and tax liability for this quarter.**

If you are unsure about whether you are a monthly schedule depositor or a semiweekly schedule depositor, see Pub. 15 (Circular E), section 11.

14 ☐ H ☐ I Write the state abbreviation for the state where you made your deposits OR write "MU" if you made your deposits in multiple states.

- 15 Check one: ☐ Line 10 is less than \$2,500. Go to Part 3.  
☐ You were a monthly schedule depositor for the entire quarter. Fill out your tax liability for each month. Then go to Part 3.

Tax liability: Month 1

Month 2

Month 3

Total liability for quarter  Total must equal line 10.

- ☒ You were a semiweekly schedule depositor for any part of this quarter. Fill out Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors, and attach it to this form.

**Part 3: Tell us about your business. If a question does NOT apply to your business, leave it blank.**

- 16 If your business has closed or you stopped paying wages ☐ Check here, and enter the final date you paid wages .  
17 If you are a seasonal employer and you do not have to file a return for every quarter of the year ☐ Check here.

**Part 4: May we speak with your third-party designee?**

Do you want to allow an employee, a paid tax preparer, or another person to discuss this return with the IRS? See the instructions for details.

☐ Yes. Designee's name

☒ No.

Phone

Personal Identification Number (PIN)

**Part 5: Sign here. You MUST fill out both sides of this form and SIGN it.**

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief it is true, correct, and complete.

Sign your name here

Print name and title

Lyle J. Matsunaga

Assistant Treasurer

Date

04/06/06

Phone

(808) 871-8461 Ext. 2303

**Part 6: For PAID preparers only (optional)**

Paid Preparer's  
Signature

Firm's name

Address

EIN

ZIP code

Date

Phone

SSN/PTIN

☐ Check if you are self-employed.

**Report of Tax Liability for Semiweekly Schedule Depositors**  
(Rev. January 2006) Department of the Treasury — Internal Revenue Service

4)     -

player identification number

9 9 - 0 0 4 7 8 0 0

Name (not your trade name)  MAUI ELECTRIC COMPANY, LTD

Calendar year     2 0 0 6 (Also check quarter)

Use this schedule to show your **TAX LIABILITY** for the quarter; **DO NOT** use it to show your deposits. You must fill out this form and attach it to Form 941 (or Form 941-SS) if you are a semiweekly schedule depositor or became one because your accumulated tax liability on any day was \$100,000 or more. Write your daily tax liability on the numbered space that corresponds to the date wages were paid. See Section 11 in Pub. 15 (Circular E), *Employer's Tax Guide*, for details.

1	•	9	•	17	•	25	•
2	•	10	•	18	•	26	•
3	•	11	•	19	241805 • 73	27	•
4	•	12	•	20	•	28	•
5	•	13	•	21	•	29	•
6	244746 • 90	14	•	22	•	30	•
7	•	15	•	23	•	31	•
	•	16	•	24	•		

486552 . 63

1	•	9	•	17	•	25	•
2	238798 • 64	10	40857 • 27	18	•	26	•
3	•	11	•	19	•	27	•
4	•	12	•	20	•	28	•
5	•	13	15534 • 70	21	•	29	•
6	•	14	•	22	•	30	•
7	•	15	•	23	•	31	•
8	•	16	252541 • 22	24	•		

547731 . 43

1	40703 • 00	9	•	17	•	25	•
2	267995 • 92	10	11178 • 60	18	•	26	•
3	•	11	•	19	•	27	•
4	•	12	•	20	•	28	•
5	•	13	•	21	•	29	•
6	•	14	•	22	•	30	260726 • 71
7	•	15	•	23	•	31	•
	•	16	237584 • 01	24	•		

818188 . 24

Total must equal line 10 on Form 941 (or line 8 on Form 941-SS).

1852472.30

Form 941 for 2006: Employer's QUARTERLY Federal Tax Return  
(Rev. January 2006) Department of the Treasury Internal Revenue Service

1018

970106

OMB No. 1545-0029

(EIN)  
Employer identification number 99-0047800  
Name of your business MAUI ELECTRIC COMPANY, LTD  
Trade name (if any) HECO  
Address 210 WEST KAMEHAMEHA AVE  
KAHULUI HI 96732

Report for this Quarter (Check one)  
☐ 1: January, February, March  
☒ 2: April, May, June  
☐ 3: July, August, September  
☐ 4: October, November, December

Part 1: Answer these questions for this quarter.

1 Number of employees who received wages, tips, or other compensation for the pay period including: Mar. 12 (Quarter 1), June 12 (Quarter 2), Sept. 12 (Quarter 3), Dec. 12 (Quarter 4) 1 310

2 Wages, tips, and other compensation 2 5154110.84

3 Total income tax withheld from wages, tips, and other compensation 3 721377.98

4 If no wages, tips, and other compensation are subject to social security or Medicare tax ☐ Check and go to line 6.

5 Taxable social security and Medicare wages and tips:

	Column 1	Column 2
5a Taxable social security wages	5629795.86	698094.69
5b Taxable social security tips		
5c Taxable Medicare wages & tips	5674822.86	164569.86
5d Total social security and Medicare taxes (Column 2, lines 5a + 5b + 5c = line 5d)		862664.55

6 Total taxes before adjustments (lines 3 + 5d = line 6) 6 1584042.53

7 TAX ADJUSTMENTS: Read instructions for line 7 before completing lines 7a through 7g.

7a Current quarter's fractions of cents <0.39>

7b Current quarter's sick pay 0.00

7c Current quarter's adjustments for tips and group-term life insurance 0.00

7d Current year's income tax withholding (attach Form 941c) 0.00

7e Prior quarters' social security and Medicare taxes (attach Form 941c) 0.00

7f Special additions to federal income tax (attach Form 941c)

7g Special additions to social security and Medicare (attach Form 941c)

7h TOTAL ADJUSTMENTS (Combine all amounts: lines 7a through 7g.) 7h <0.39>

8 Total taxes after adjustments (Combine lines 6 and 7h) 8 1584042.14

9 Advance earned income credit (EIC) payments made to employees 9 0.00

10 Total taxes after adjustment for advance EIC (line 8 - line 9 = line 10) 10 1584042.14

11 Total deposits for this quarter, including overpayment applied from a prior quarter. 11 1584042.14

12 Balance due (If line 10 is more than line 11, write the difference here.) 12

13 Overpayment (If line 11 is more than line 10, enter the difference here.)

For Privacy Act and Paperwork Reduction Act Notice, see the Payment Voucher.

Form 941 (Rev. 1-2006)

Check one ☐ Apply to next return.  
☐ Send a refund.

970206

Form 941 (Rev. 1-2006) Page 2

Name (not your trade name)

HAU1 ELECTRIC COMPANY, LTD

Employer identification number (EIN)

99-0047800

**Part 2: Tell us about your deposit schedule and tax liability for this quarter.**

you are unsure about whether you are a monthly schedule depositor or a semiweekly schedule depositor, see Pub. 15 (Circular E), section 11.

14 ☐ HI Enter the state abbreviation for the state where you made your deposits OR enter "MU" if you made your deposits in multiple states.

15 Check one: ☐ Line 10 is less than \$2,500. Go to Part 3.

☐ You were a monthly schedule depositor for the entire quarter. Fill out your tax liability for each month. Then go to Part 3.

Tax liability: Month 1

Month 2

Month 3

Total liability for quarter

Total must equal line 10.

☒ You were a semiweekly schedule depositor for any part of this quarter. Fill out Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors, and attach it to this form.

**Part 3: Tell us about your business. If a question does NOT apply to your business, leave it blank.**

16 If your business has closed or you stopped paying wages. ☐ Check here, and

enter the final date you paid wages

17 If you are a seasonal employer and you do not have to file a return for every quarter of the year. ☐ Check here.

**Part 4: May we speak with your third-party designee?**

Do you want to allow an employee, a paid tax preparer, or another person to discuss this return with the IRS? See instructions for details.

☐ Yes Designee's name

☒ No. Phone

Personal Identification Number (PIN)

**Part 5: Sign here. You MUST fill out both sides of this form and SIGN it.**

Under penalties of perjury, I declare that I have prepared this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete.

Sign your name here

Print name and title

LYLE J. MATSUNAGA

ASSISTANT TREASURER

Date

06/30/06

Phone

(808) 871-8461 EXT: 2303

**Part 6: For PAID preparers only (optional)**

Paid Preparer's  
Signature

Firm's name

Address

EIN

ZIP code

Date

Phone

SSN/PTIN

☐ Check if you are self-employed.



**Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors**  
Calendar Year 2006  
Department of the Treasury -- Internal Revenue Service

OMB No. 1545-0029 970306  
Report for this Quarter

Employer identification number 99-0047800

Name (not your trade name)

MAUI ELECTRIC COMPANY, LTD

Use this schedule to show your TAX LIABILITY for the quarter; DO NOT use it to show your deposits. You must fill out this form & attach it to Form 941 (or Form 941-SS) if you are a semiweekly schedule depositor or became one because your accumulated tax liability on any day was \$100,000 or more. Enter your daily tax liability on the numbered space that corresponds to the date wages were paid.

- ☐ 1: January, February, March  
☒ 2: Apr. May, June  
☐ 3: July, August, September  
☐ 4: October, November, December

**Month 1**

1		9		17		25	
2		10		18		26	
3		11		19		27	275350.55
4		12		20		28	
5		13	278957.17	21		29	
6		14		22		30	
7		15		23		31	
8		16		24			

Tax liability for Month 1

554307.72

**Month 2**

1		9		17		25	251874.01
2		10		18		26	
3		11	257918.99	19		27	
4		12		20		28	
5		13		21		29	
6		14		22		30	
7		15		23		31	
8		16		24			

Tax liability for Month 2

509793.00

**Month 3**

1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	
5		13		21		29	
6		14		22	251002.86	30	
7		15		23		31	
8	268938.56	16		24			

Tax liability for Month 3

519941.42

Fill in your total liability for the quarter (Month 1 + Month 2 + Month 3) = Total tax liability for the quarter

Total must equal line 10 on Form 941 (or line 8 on Form 941-SS).

Total liability for the quarter

1584042.14

For Paperwork Reduction Act Notice, see separate instructions.

Schedule B (Form 941) Rev. 1-2006

Form **941 for 2006: Employer's QUARTERLY Federal Tax Return**  
(Rev. January 2006) Department of the Treasury — Internal Revenue Service

960106

OMB No. 1545-0029

KF 99-0047800

77 \*\*\*\*AUT0\*\*5-DIGIT 96732  
SEP2006 S 29 C  
MAUI ELECTRIC CO LTD

210 W KAMEHAMEHA AVE  
KAHULUI HI 96732-2253

|||||

**Report for this Quarter ...**  
(Check one.)

- ☐ 1: January, February, March  
☐ 2: April, May, June  
☒ 3: July, August, September  
☐ 4: October, November, December

Read the separate instructions before you fill out this form. Please type or print within the boxes.

**Part 1: Answer these questions for this quarter.**

1	Number of employees who received wages, tips, or other compensation for the pay period including: Mar. 12 (Quarter 1), June 12 (Quarter 2), Sept. 12 (Quarter 3), Dec. 12 (Quarter 4)	1	312																
2	Wages, tips, and other compensation	2	6087990.78																
3	Total income tax withheld from wages, tips, and other compensation	3	861456.22																
4	If no wages, tips, and other compensation are subject to social security or Medicare tax	<input type="checkbox"/> Check and go to line 6.																	
5	Taxable social security and Medicare wages and tips:																		
<table border="0"><thead><tr><th></th><th>Column 1</th><th></th><th>Column 2</th></tr></thead><tbody><tr><td>5a</td><td>Taxable social security wages</td><td>6511765.74 × .124 =</td><td>807458.95</td></tr><tr><td>5b</td><td>Taxable social security tips</td><td> × .124 =</td><td> .</td></tr><tr><td>5c</td><td>Taxable Medicare wages &amp; tips</td><td>6645807.36 × .029 =</td><td>192728.41</td></tr></tbody></table>					Column 1		Column 2	5a	Taxable social security wages	6511765.74 × .124 =	807458.95	5b	Taxable social security tips	× .124 =	.	5c	Taxable Medicare wages & tips	6645807.36 × .029 =	192728.41
	Column 1		Column 2																
5a	Taxable social security wages	6511765.74 × .124 =	807458.95																
5b	Taxable social security tips	× .124 =	.																
5c	Taxable Medicare wages & tips	6645807.36 × .029 =	192728.41																
5d	Total social security and Medicare taxes (Column 2, lines 5a + 5b + 5c = line 5d)	6d	1000187.36																
6	Total taxes before adjustments (lines 3 + 5d = line 6)	6	1861643.58																
7	TAX ADJUSTMENTS (Read the instructions for line 7 before completing lines 7a through 7h.)																		
7a	Current quarter's fractions of cents		.18																
7b	Current quarter's sick pay		.																
7c	Current quarter's adjustments for tips and group-term life insurance		.																
7d	Current year's income tax withholding (attach Form 941c)		.																
7e	Prior quarters' social security and Medicare taxes (attach Form 941c)		.																
7f	Special additions to federal income tax (attach Form 941c)		.																
7g	Special additions to social security and Medicare (attach Form 941c)		.																
7h	TOTAL ADJUSTMENTS (Combine all amounts: lines 7a through 7g.)	7h	.18																
8	Total taxes after adjustments (Combine lines 6 and 7h.)	8	1861643.76																
9	Advance earned income credit (EIC) payments made to employees	9	.00																
10	Total taxes after adjustment for advance EIC (line 8 - line 9 = line 10)	10	1861643.76																
11	Total deposits for this quarter, including overpayment applied from a prior quarter	11	1861643.76																
Balance due (If line 10 is more than line 11, write the difference here.) Make checks payable to United States Treasury.		12	.																
13	Overpayment (If line 11 is more than line 10, write the difference here.)		.																
▶ You MUST fill out both pages of this form and SIGN it.		Check one <input type="checkbox"/> Apply to next return. <input type="checkbox"/> Send a refund.																	

Next ➔

For Privacy Act and Paperwork Reduction Act Notice, see the back of the Payment Voucher.

Cat No 17001Z Form 941 (Rev. 1-2006)

960206

Name (not your trade name) MAUI ELECTRIC COMPANY, LTD. Employer identification number (EIN) 99-0047800

**Part 2: Tell us about your deposit schedule and tax liability for this quarter.**

If you are unsure about whether you are a monthly schedule depositor or a semiweekly schedule depositor, see Pub. 15 (Circular E), section 11.

14 ☐ H ☐ I Write the state abbreviation for the state where you made your deposits OR write "MU" if you made your deposits in multiple states.

- 15 Check one: ☐ Line 10 is less than \$2,500. Go to Part 3.  
☐ You were a monthly schedule depositor for the entire quarter. Fill out your tax liability for each month. Then go to Part 3.

Tax liability: Month 1

Month 2

Month 3

Total liability for quarter Total must equal line 10.

- ☒ You were a semiweekly schedule depositor for any part of this quarter. Fill out Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors, and attach it to this form.

**Part 3: Tell us about your business. If a question does NOT apply to your business, leave it blank.**

- 16 If your business has closed or you stopped paying wages ☐ Check here, and enter the final date you paid wages  
17 If you are a seasonal employer and you do not have to file a return for every quarter of the year ☐ Check here.

**Part 4: May we speak with your third-party designee?**

Do you want to allow an employee, a paid tax preparer, or another person to discuss this return with the IRS? See the instructions for details.

- ☐ Yes. Designee's name  
Phone Personal Identification Number (PIN) ☐ ☐ ☐ ☐ ☐  
☒ No.

**Part 5: Sign here. You MUST fill out both sides of this form and SIGN it.**

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief it is true, correct, and complete.

X Sign your name here  
Print name and title Lyle J. Matsunaga Assistant Treasurer  
Date 10 / 25 / 06 Phone ( 808 ) 871 - 8461

**Part 6: For PAID preparers only (optional)**

Paid Preparer's Signature  
Firm's name  
Address  
Date Phone  
EIN  
ZIP code  
SSN/PTIN  
☐ Check if you are self-employed.

**Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors**  
Department of the Treasury — Internal Revenue Service

OMB No. 1545-0029 970306  
Report for this Quarter

Calendar Year 2006  
Employer Identification number 99-0047800

☐ 1: January, February, March  
☐ 2: April, May, June  
☒ 3: July, August, September  
☐ 4: October, November, December

Name (not your trade name) HAUI ELECTRIC COMPANY, LTD.

Use this schedule to show your TAX LIABILITY for the quarter; DO NOT use it to show your deposits.  
You must fill out this form & attach it to Form 941 (or Form 941-SS) if you are a semiweekly schedule  
depositor or became one because your accumulated tax liability on any day was \$100,000 or more.  
Enter your daily tax liability on the numbered space that corresponds to the date wages were paid.

Month 1

1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20	276359.90	28	
5		13		21		29	
6		14		22		30	
7	253302.16	15		23		31	
8		16		24			

Tax liability for Month 1

529662.06

Month 2

1		9		17	252938.22	25	
2		10		18		26	
3	274636.73	11		19		27	
4		12		20		28	
5		13		21		29	
6		14		22		30	
7		15		23		31	258787.77
8		16		24			

Tax liability for Month 2

786362.72

Month 3

1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	259724.64
5		13		21		29	
6		14	285894.34	22		30	
7		15		23		31	
8		16		24			

Tax liability for Month 3

545618.98

Fill in your total liability for the quarter (Month 1 + Month 2 + Month 3) = Total tax liability for the quarter

Total must equal line 10 on Form 941 (or line 8 on Form 941-SS).

Total liability for the quarter

1861643.76

For Paperwork Reduction Act Notice, see separate instructions.

Schedule B (Form 941) Rev. 1-2006

Form **941 for 2006: Employer's QUARTERLY Federal Tax Return**  
(Rev. January 2006) Department of the Treasury - Internal Revenue Service

960106

KF 99-0047800

\*\*\*\*\*AUTO\*\*SCH 3-DIGIT 967  
DEC2006 S29 C  
MAUI ELECTRIC CO LTD

PO BOX 398  
KAHULUI, HI 96733-6898

239

Report for this Quarter ...  
(Check one)

- ☐ 1: January, February, March  
☐ 2: April, May, June  
☐ 3: July, August, September  
☒ 4: October, November, December

Read the separate instructions before you fill out this form. Please type or print within the boxes.

Part 1: Answer these questions for this quarter.

1	Number of employees who received wages, tips, or other compensation for the pay period including: Mar. 12 (Quarter 1), June 12 (Quarter 2), Sept. 12 (Quarter 3), Dec. 12 (Quarter 4)	1	311
2	Wages, tips, and other compensation	2	5778118 .20
3	Total income tax withheld from wages, tips, and other compensation	3	865493 .25
4	If no wages, tips, and other compensation are subject to social security or Medicare tax	<input type="checkbox"/> Check and go to line 8.	
5	Taxable social security and Medicare wages and tips:		
	Column 1	Column 2	
5a	Taxable social security wages	5233153 .33	$\times .124 = 648911 .01$
5b	Taxable social security tips	.	$\times .124 = .$
5c	Taxable Medicare wages & tips	6196168 .37	$\times .029 = 179688 .88$
5d	Total social security and Medicare taxes (Column 2, lines 5a + 5b + 5c = line 5d)	5d	828599 .89
6	Total taxes before adjustments (lines 3 + 5d = line 6)	6	1694093 .14
7	TAX ADJUSTMENTS (Read the instructions for line 7 before completing lines 7a through 7h.)		
7a	Current quarter's fractions of cents	7a	.43
7b	Current quarter's sick pay	7b	.
7c	Current quarter's adjustments for tips and group-term life insurance	7c	.
7d	Current year's income tax withholding (attach Form 941c)	7d	.
7e	Prior quarters' social security and Medicare taxes (attach Form 941c)	7e	.
7f	Special additions to federal income tax (attach Form 941c)	7f	.
7g	Special additions to social security and Medicare (attach Form 941c)	7g	.
7h	TOTAL ADJUSTMENTS (Combine all amounts: lines 7a through 7g.)	7h	.43
8	Total taxes after adjustments (Combine lines 6 and 7h.)	8	1694093 .57
9	Advance earned income credit (EIC) payments made to employees	9	.
10	Total taxes after adjustment for advance EIC (line 8 - line 9 = line 10)	10	1694093 .57
11	Total deposits for this quarter, including overpayment applied from a prior quarter	11	1694093 .57
12	Balance due (If line 10 is more than line 11, write the difference here.) Make checks payable to United States Treasury.	12	.
13	Overpayment (If line 11 is more than line 10, write the difference here.)	13	.

Check one ☐ Apply to next return.  
☐ Send a refund.

For Privacy Act and Paperwork Reduction Act Notice, see the back of the Payment Voucher.

Cat. No. 170012

Form 941 (Rev. 1-2006)

960206

Name (not your trade name) **MAUI ELECTRIC COMPANY, LTD.** Employer identification number (EIN) **99-0047800**

**Part 2: Tell us about your deposit schedule and tax liability for this quarter.**

If you are unsure about whether you are a monthly schedule depositor or a semiweekly schedule depositor, see Pub. 15 (Circular E), section 11.

14 ☐ H ☐ I Write the state abbreviation for the state where you made your deposits OR write "MU" if you made your deposits in multiple states.

15 Check one: ☐ Line 10 is less than \$2,500. Go to Part 3.  
☐ You were a monthly schedule depositor for the entire quarter. Fill out your tax liability for each month. Then go to Part 3.

Tax liability: Month 1

Month 2

Month 3

Total liability for quarter  Total must equal line 10.

☒ You were a semiweekly schedule depositor for any part of this quarter. Fill out Schedule B (Form 941) Report of Tax Liability for Semiweekly Schedule Depositors, and attach it to this form.

**Part 3: Tell us about your business. If a question does NOT apply to your business, leave it blank.**

16 If your business has closed or you stopped paying wages ☐ Check here, and enter the final date you paid wages

17 If you are a seasonal employer, and you do not have to file a return for every quarter of the year, ☐ Check here.

**Part 4: May we speak with your third-party designee?**

Do you want to allow an employee, a paid tax preparer, or another person to discuss this return with the IRS? See the instructions for details.

☐ Yes. Designee's name

Phone  Personal Identification Number (PIN)

☒ No.

**Part 5: Sign here. You MUST fill out both sides of this form and SIGN it.**

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete.

☒ Sign your name here

Print name and title **LYLE J. MATSUNAGA ASSISTANT TREASURER**

Date **1 / 22 / 07** Phone **(808 ) 877 -8461 Ext 2303**

**Part 6: For PAID preparers only (optional)**

Paid Preparer's Signature

Firm's name

Address

EIN

ZIP code

Date

Phone

SSN/PTIN

☐ Check if you are self-employed.

**Schedule B (Form 941): Report of Tax Liability for Semiweekly Schedule Depositors**  
Department of the Treasury -- Internal Revenue Service

OMB No. 1545-0029 970306  
Report for this Quarter

Calendar Year 2006

Employer identification number 99-0047800

Name (not your trade name) MAUI ELECTRIC COMPANY, LTD

Use this schedule to show your TAX LIABILITY for the quarter; DO NOT use it to show your deposits.  
You must fill out this form & attach it to Form 941 (or Form 941-SS) if you are a semiweekly schedule depositor or became one because your accumulated tax liability on any day was \$100,000 or more.  
Enter your daily tax liability on the numbered space that corresponds to the date wages were paid.

☐ 1: January, February, March  
☐ 2: April, May, June  
☐ 3: July, August, September  
☒ 4: October, November, December

**Month 1**

1		9		17		25	
2		10		18		26	293235.96
3		11		19		27	
4		12		20		28	
5		13	273733.50	21		29	
6		14		22		30	
7		15		23		31	
8		16		24			

Tax liability for Month 1

566969.46

**Month 2**

1		9	274650.59	17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	
5		13		21		29	
6		14		22		30	
7		15		23		31	
8		16		24			299541.48

Tax liability for Month 2

574192.07

**Month 3**

1		9		17		25	
2		10		18		26	1209.00
3		11		19		27	
4		12		20		28	
5		13		21		29	274769.88
6		14		22		30	
7	276953.16	15		23		31	
8		16		24			

Tax liability for Month 3

552932.04

Fill in your total liability for the quarter (Month 1 + Month 2 + Month 3) = Total tax liability for the quarter

Total must equal line 10 on Form 941 (or line 8 on Form 941-SS).

Total liability for the quarter

1694093.57

For Paperwork Reduction Act Notice, see separate instructions.

Schedule B (Form 941) Rev. 1-2006

CA-IR-179

**Ref: MECO-1301 – (Revenue Taxes).**

Please provide calculations of the proposed test year PSC tax, PUC fee and Franchise Royalty revenue tax items at present, current and proposed rates, since supporting calculations of such amounts are not set forth in WP-1301, indicating whether the revenue base in each calculation has properly accounted for the statutory definitions of taxable revenues.

**MECO Response:**

Please refer to MECO-WP-2001, pages 6-7, for the calculations of total company revenue taxes at present/current rates. Please refer to page 2 of this response for the calculations of total company revenue taxes at proposed rates.



**MAUI ELECTRIC COMPANY, LTD.  
SUPPORT FOR PUBLIC SERVICE COMPANY (PSC) TAX,  
PUBLIC UTILITY COMMISSION (PUC) FEES AND FRANCHISE ROYALTY TAXES  
TEST YEAR 2007  
(in 000s)**

<b>PSC Tax Calculation</b>	<b>At Proposed Rates</b>	<b>References</b>
Electric Sales Revenues	374,526	MECO-2001
Other Operating Revenues	1,759	MECO-2001
Less: Bad Debt Deduction	(225)	MECO-2001
PSC Tax Base	376,060	
PSC Tax Rate	5.885%	MECO-WP-1301, p.1
PSC Taxes	22,131	MECO-1301

<b>PUC Fee Calculation</b>	<b>At Proposed Rates</b>	<b>References</b>
Electric Sales Revenues	374,526	MECO-2001
Other Operating Revenues	1,759	MECO-2001
Less: Bad Debt Deduction	(225)	MECO-2001
PUC Fees Base	376,060	
PUC Fees Rate	0.5%	MECO-WP-1301, p.1
PUC Fees	1,880	MECO-1301

<b>Franchise Royalty Taxes</b>	<b>At Proposed Rates</b>	<b>References</b>
Electric Sales Revenue	374,526	MECO-2001
Less: Bad Debt Deduction	(225)	MECO-2001
Franchise Royalty Tax Base	374,301	
Franchise Royalty Tax Rate	2.5%	MECO-WP-1301, p.1
Franchise Royalty Taxes	9,358	MECO-1301
Total Revenue Taxes	33,370	MECO-1301

NOTE: Totals may not add exactly due to rounding.

CA-IR-180

**Ref: MECO T-13, page 29, line 15 – (Section 199 Deduction)**

According to the testimony, "MECO has not had the opportunity to recalculate the §199 deduction under present and proposed rates in this direct submission, but the change in the generation allocation in the cost of service study and the additional revenues at proposed rates is expected to generate some IRC §199 deduction. In addition, based on the issues raised in the Hawaii Electric Light Company, Inc. Docket No. 05-0315, MECO will review its calculation and potentially revise its computation and estimated impact on revenue requirements at the next opportunity." Please provide the following information:

- a. The Company's best estimate of the MECO §199 deduction, based upon test year proposed revenue and expense amounts and allocations, assuming MECO income taxes are calculated on a stand-alone (*sic.*) basis (no consolidated HEI return).
- b. Identify and describe any known uncertainties or potential issues with regard to the calculations provided in your response to part (a) of this information request.
- c. State whether MECO objects to reflection of an appropriately calculated §199 deduction within test year ratemaking income tax expenses.
- d. If your response to part (c) of this information request is affirmative, explain all bases for such objection and provide supporting documentation for same.

**MECO Response:**

- a. The requested estimate of MECO's §199 deduction is \$1,177,000. The calculation is shown on pages 2 through 4.
- b. The allocation and apportionment of income and expenses is a potential issue with the Internal Revenue Service (IRS). Reasonable allocation and apportionment assumptions have been made in the calculation shown on pages 2 through 4, but these assumptions have not yet been subject to review by the IRS as §199 was effective only since 2005.
- c. No, MECO does not object.
- d. Not applicable.

**MAUI ELECTRIC COMPANY, LTD.**  
**Calculation of Qualified Production Activity Income (QPAI)**  
**Test Year 2007**  
**(\$ Thousands)**

	<b>TY 2007 Proposed Rates (MECO-2001)</b>	<b>Allocated To Generation</b>	
Electric Sales Revenue	374,526.0 (C)	281,954 (E)	See note (1).
Other Operating Revenue	1,759.0		
	<u>376,285.0</u>	<u>281,954</u>	
Power production expense-Fuel	(180,465.0)	(180,465)	
Power production expense-Purchased Power	(33,982.0) (A)		
Power production expense-Production	(21,015.0)	(21,015)	
Transmission expense	(2,277.0)	-	
Distribution expense	(6,336.0)	-	
Customer accounts expense	(3,086.0)	(2,580)	Allocation based on note (2) below.
Customer service	(225.0)	(188)	Allocation based on note (2) below.
A & G expense	(1,541.0)	(1,288)	Allocation based on note (2) below.
Miscellaneous	(13,560.0)	(11,337)	Allocation based on note (2) below.
Total O&M expense	<u>(262,487.0)</u>	<u>(216,874)</u>	
Depreciation expense	(28,872.0)	-	
Amort of State ITC	518.0	-	
Taxes other than income taxes	(34,748.0)	(26,187)	CA-IR-180, page 4
Income taxes	(15,797.0)	-	
Interest on customer deposits	(233.0)	(195)	Allocation based on note (2) below.
Other operating expense	<u>(79,132.0)</u>	<u>(26,382)</u>	
Net utility operating income	<u>34,666.0</u>		
<b>Tax Adjustments:</b>			
Interest	(9,895.0)	(5,913)	Allocation based on note (5) below.
Estimated Current State ITC on Production Assets		153	See note (4) below.
Estimated State Tax Depreciation on Production Assets		(12,354)	See note (3) below.
State Pretax Income		20,585	(F)
Less: State Tax Deduction		(1,237)	(F) * 6.0150376% state tax rate
State Taxable Income		19,348	
Add: Federal State Tax Depreciation Difference		264	See note (3) below.
Estimated taxable income for generation activity for 2007		<u>19,612</u>	
<b>Estimated Domestic Production Activities Deduction (6%)</b>		<u>1,177</u>	
<b>Estimated Federal Tax Effect at 35%</b>		<u>412</u>	
<b>NOTES:</b>			
<b>(1) Calculation of Revenue Attributable to Purchased Power:</b>			
Power Production Expense-Purchased Power		33,982 (A)	
Divided by: Revenue Tax Gross Up (1-.08885)		<u>91.11509%</u>	
Purchased Power Revenue Grossed Up		<u>37,296 (B)</u>	
<b>Electric Sales Revenue Net of Purchased Power Revenues</b>			
Electric Sales Revenue		374,526 (C)	
Less: Electric Sales Revenues Related to Purchased Power		<u>(37,296) (B)</u>	
Electric Sales Revenue, Net of Purchased Power Revenue		<u>337,230 (D)</u>	
<b>Production Sales Net of Purchased Power Revenues</b>			
Total Production Sales		319,250 CA-IR-180, p. 3	
Less: Production Sales Revenues Related to Purchased Power		<u>(37,296) (B)</u>	
Production Sales Revenue, Net of Purchased Power Revenue		<u>281,954 (E)</u>	
<b>(2) Allocation based on current cost of service worksheets as adjusted for purchased power revenues:</b>			
Production Sales / Electric Sales Revenue	281,954 / 337,230	(E) / (D)	
Production Cost of Service Percentage Calculated	83.6088%		
<b>(3) 2007 State Tax Depreciation of Production Assets</b>			
2007 Federal Tax Depreciation of Production Assets	(12,354)	will change for change in production assets additions	
Federal State Depreciation Adjustment	<u>(12,090)</u>	will change for change in production assets additions	
	<u>264</u>		
<b>(4) 2007 Production Tax Additions per State Tax Depreciation</b>			
State ITC Rate	3,831.2	will change for change in production assets additions	
2007 State ITC Related to Production Assets	<u>4%</u>		
	<u>153.2</u>		
<b>(5) Rate Base Associated with Production Activities</b>			
Average Rate Base at Present Rates	230,684.8	CA-IR-180, p. 3	
Interest Allocation Based on Rate Base %	386,040.0	MECO-1501	
	59.7567%		

**MAUI ELECTRIC COMPANY, LTD.**  
**Taxes Other Than Income**  
**Test Year 2007**  
**(\$ Thousands)**

	<b>TY 2007 Proposed Rates</b>	<b>References</b>
<b><u>Total Production Sales</u></b>		
Maui Division	297,875.6	MECO-WP-1802, p. 65
Lanai Division	9,658.2	MECO-WP-1802, p. 154
Molokai Division	11,716.0	MECO-WP-1802, p. 243
Total Production Sales	<u>319,249.8</u>	CA-IR-180, p. 2
<b><u>Rate Base Associated with Production Function</u></b>		
Maui Division	208,591.1	MECO-WP-1802, p. 49
Lanai Division	10,259.7	MECO-WP-1802, p. 138
Molokai Division	11,834.0	MECO-WP-1802, p. 227
Total Production Sales	<u>230,684.8</u>	CA-IR-180, p. 2

**MAUI ELECTRIC COMPANY, LTD.**

**Taxes Other Than Income**

**Test Year 2007**

**(\$ Thousands)**

	<b>TY 2007</b>	<b>References</b>
<b><u>PSC Tax Calculation</u></b>		
Electric Sales Revenue	281,954	CA-IR-180, p. 2
Less: Bad Debt Deduction	(188)	See Note 1 below
PSC Tax Base	281,766	
PSC Tax Rate	5.885%	MECO-WP-1301, p. 1
PSC Taxes	16,582	
<b><u>PUC Fee Calculation</u></b>		
Electric Sales Revenue	281,954	CA-IR-180, p. 2
Less: Bad Debt Deduction	(188)	See Note 1 below
PUC Fee Base	281,766	
PUC Fees Rate	0.5%	MECO-WP-1301, p. 1
PUC Fees	1,409	
<b><u>Franchise Royalty Tax Calculation</u></b>		
Electric Sales Revenue	281,954	CA-IR-180, p. 2
Less: Bad Debt Deduction	(188)	See Note 1 below
Franchise Royalty Tax Base	281,766	
Franchise Royalty Tax Rate	2.5%	MECO-WP-1301, p. 1
Franchise Royalty Taxes	7,044	
<b><u>Payroll Taxes</u></b>		
Total Payroll Taxes	1,378	MECO-WP-1301, p. 2
Allocation Factor	83.6088%	See Note 2 on CA-IR-180, p. 2
Payroll Taxes allocated to Production	1,152	
Total Taxes Other Than Income	26,187	CA-IR-180, p. 2
<b>NOTE 1: Calculation of Bad Debt Deduction</b>		
Total Allowance for Uncollectible Accounts	225	MECO-2001, p. 1
Production Cost of Service Percentage	83.6088%	See Note 2 on CA-IR-180, p. 2
Bad Debt allocated to Production	188	

CA-IR-181

**Ref: MECO T-13, page 35, line 9 - (FIN 48 Impacts)**

According to the testimony, "MECO is in the process of evaluating its uncertain tax positions and their impact on the implementation of FIN 48. MECO has not yet quantified the estimated impact, but it is not expected to be material to the financial statements." Please provide the following information:

- a. Describe the status of MECO's evaluation and identify each "uncertain tax position" that is believed to exist.
- b. List and quantify each adjustment to the Company's asserted rate base or income statement that is proposed by MECO with respect to FIN 48, if any.
- c. Provide complete copies of all studies, reports, analyses and other documents associated with your response to part (b) of this information request.

**MECO Response:**

- a. MECO reviewed its uncertain tax positions taken in current and prior tax years and identified the following items:

	Total Deduction At Risk	Probability of Occurring	FIN 48 Adj. Base
1. 2004-2005 Tax Capitalized Interest	5,029,824	25%	1,257,456
2. 2004-2005 Percentage Repairs			
Allowance	420,153	25%	105,038

- b. The "Total Deduction At Risk" amounts above were deducted in originally filed tax returns and are temporary differences. The temporary difference items generated deferred tax liabilities and are included in rate base. The FIN 48 adjustment to deferred taxes for financial reporting purposes was not included in MECO's test year rate base and the interest accrued on this potential liability was not included in the test year cost of service.
- c. Not applicable, since the FIN 48 adjustment is not included in MECO's test year estimates.

CA-IR-182

**Ref: T-13, page 22, MECO-WP-1305 – (Deferred Tax Balances).**

According to the testimony, "Consistent with prior MECO rate cases, the deferred taxes for items excluded in determining MECO's revenue requirements in prior rate case decisions have been excluded from the deferred tax balance for the test year." Please provide the following information:

- a. Describe the basis for excluding each listed "Rate Case Adjustment" item at pages 3 and 6 of WP-1305.
- b. For the excluded "Rate Case Adjustment" items that are not simply reversals of the fully sub-account balance listed above on pages 3 and 6 of WP-1305, explain how the amount was derived and provide calculations for same.
- c. State whether any further revisions are needed to these calculations, given HELCO rate case revisions to these calculations in Docket No. 05-0315 and quantify each such adjustment.
- d. Explain the rationale for including within rate base each of the following listed Deferred Income Tax balances, indicating where corresponding timing difference accrual balances are included in determining revenue requirements (either by rate base inclusion, working cash inclusion or deferred return calculations):
  1. 28312 Prepaid Expenses.
  2. 28314 Computer Software Costs.
  3. 28317 Electric Disc Trust.
  4. 28319 Cap Items Chg.
  5. 28312 (sic.) Conn Fee.
  6. 28340 IRP/DSM Costs.
  7. 28400 Customer Information System.
  8. 28304 (sic.) Ellipse Software Costs.
  9. 28404 Emission Fees Accrued.
  10. 28405 Hawaii R&D Credit.
  11. 28406 Legal Fees Deferred for Tax.
  12. 28408 Oil Spill Cleanup (sic.)
  13. 28409 Project Apprise Costs.
- e. Provide an updated MECO-WP-1305, substituting actual balances as of December 31, 2006 and revised estimates of 2007 activity.
- f. Explain the "Rate Case Adjustments" for "AFUDC in CWIP" and "TCI in CWIP", indicating whether these exclusions have been made in previous rate cases and how such amounts were calculated.

MECO Response:

Int IRS Adj – IRS Interest Adjustment

- a. The deferred tax asset related to this item is the result of a temporary difference between the book and tax treatment of accrued interest on potential or actual Internal Revenue Service and/or State of Hawaii Department of Taxation income tax adjustments. Although the Commission has not specifically addressed MECO's ratemaking treatment of this item, the Commission ruled that HECO, not the ratepayer, should pay for any costs resulting from an audit, in D&O No. 11699 (6/30/92), Docket No. 6998. Consequently, the related deferred taxes are excluded. This treatment is consistent with MECO's position in Docket No. 97-0346, D&O No. 16922 (4/6/99).
- b. N/A.
- c. No adjustment required.

Exec Incentive Comp – Executive Incentive Compensation

- a. To simplify and limit issues, MECO is not seeking cost recovery in this docket for incentive compensation for executives and employees. Please refer to Mr. Edward Reinhardt's testimony in MECO T-1, page 19. Deferred taxes related to executive incentive compensation are therefore excluded from rate base.
- b. N/A.
- c. No adjustment required.

Vacation Accrual

- a. For tax purposes, an accelerated deduction is allowed for accrued vacation taken between January 1<sup>st</sup> and March 15<sup>th</sup> of the subsequent year. This accelerated deduction creates a temporary difference and generates deferred taxes. Although ratemaking treatment of this



item has not been specifically addressed by the Commission with regard to MECO, in past rate cases, the Commission ruled that HECO's cost of service may include only vacation paid during the year. MECO's exclusion from rate base of the deferred taxes generated by the accelerated deduction is consistent with the HECO ruling and MECO's treatment in Docket No. 97-0346, D&O No. 16922 (4/6/99).

- b. N/A.
- c. No adjustment required.

Uncoll Accts – Uncollectible Accounts Allowance

- a. The book bad debt reserve balance is excluded from rate base; correspondingly, the related deferred taxes should also be excluded.
- b. N/A.
- c. No adjustment required.

Disc Wkrs Comp – Discounted Workers' Compensation

- a. The accrued workers' compensation liability is excluded from rate base; correspondingly, the related deferred taxes should also be excluded.
- b. N/A
- c. No adjustment required.

Gen Liab Reserve – General Liability Reserve

- a. The general liability reserve balance is excluded from rate base; correspondingly, the related deferred taxes should also be excluded.
- b. N/A.
- c. No adjustment required.

Nonqualified Pension Cost

- a. To simplify and limit issues, MECO is not seeking cost recovery in this docket for nonqualified pension expenses. Please refer to Mr. Edward Reinhardt's testimony in MECO T-1, page 19. As such, deferred taxes related to nonqualified pension expenses have been excluded from rate base.
- b. Please refer to page 14.
- c. Deferred tax amounts for this item were adjusted. Please refer to page 14.

Rate Case Costs

- a. Unamortized rate case costs are not included in rate base; correspondingly, the related deferred taxes are also excluded.
- b. N/A.
- c. No adjustment required.

OPEB Exec Life – OPEB Executive Life

- a. To simplify and limit issues, MECO is not seeking cost recovery in this docket for OPEB executive life insurance costs. Please refer to Mr. Edward Reinhardt's testimony in MECO T-1, page 19. As such, deferred taxes related to these costs have been excluded from rate base.
- b. Please refer to page 14.
- c. Deferred tax amounts for this item were adjusted. Please refer to page 14.

Deferred Comp – Restricted Stock (additional rate case adjustment – see response to part e.)

- a. To simplify and limit issues, MECO is not seeking cost recovery in this docket for incentive compensation for employees and executives. Please refer to Mr. Edward Reinhardt's

testimony in MECO T-1, page 19. As such, deferred taxes related to these costs have been excluded from rate base.

- b. N/A.
- c. No adjustment required.

FIN 48 Adjustments (additional rate case adjustment – see response to part e.)

- a. Adjustments have been made to exclude deferred taxes from rate base, consistent with the Company's testimony discussing FASB Interpretation No. 48 presented in MECO T-13, pages 30 through 34.
- b. N/A.
- c. No adjustment required.

SFAS 158 (ratemaking adjustment – see response to part e.)

- a. This item is included as a ratemaking adjustment, consistent with the treatment of the SFAS 158 liability.
- b. N/A.
- c. No adjustment required.
- d. 1. 28312 Prepaid Exp. The deferred taxes related to this item are the result of a temporary difference between the book and tax treatment of prepaid expenses. For book purposes, prepaid expense is amortized over the applicable life of the related asset. For tax purposes, MECO deducts allowable prepaid expenses when paid. Although ratemaking treatment of this item has not specifically been addressed by the Commission with regard to MECO, the deferred tax reserve related to prepaid expenses was allowed by the Commission in D&O No. 18365 (2/8/01), Docket No. 99-0207.

- d. 2. 28314 Computer Software Costs. The deferred taxes related to this item are the result of temporary differences between book and tax treatment of software costs. With the exception of specific software development costs that require pre-approval by the Commission to be deferred and amortized, software product costs are generally expensed for book purposes. For tax purposes, software costs are generally depreciated over three years; note that bonus depreciation was allowed for assets placed in service after May 6, 2003 through December 31, 2004. Software costs are included in rate base within the O&M non-labor expense component of working cash. Thus, the deferred tax asset or liability associated with software costs should also be included.
- d. 3. 28317 Electric Discount Trust. The electric discount trust is a grantor trust which is the funding mechanism for the Hawaiian Electric Company, Inc. Post Retirement Electric Discount Trust. MECO retirees are participants in this post retirement benefit. As this is a grantor trust, all items of income and expense are reported for tax purposes. For ratemaking purposes, the electric discount for retirees is reflected as lower revenues. Please refer to Ms. Julie Price's discussion in MECO T-10, pages 16 and 17. The balance in sub account 28317 represents deferred taxes on items reported for tax purposes. However, deferred taxes on book expense was recorded to sub account 28339 – OPEB. To properly reflect the deferred taxes related to the electric discount trust, this deferred tax balance should be reclassified and offset with the OPEB deferred tax amounts. This reclassification has been made on the updated MECO-WP-1305 provided on pages 15 and 16 of this response.
- d. 4. 28319 Cap Items Chg. Prior to 1986, employee benefits, payroll taxes, and use taxes that were allocated to the cost of capital construction were capitalized for book purposes but deducted for tax purposes. From 1984 through 1986, MECO normalized this difference

pursuant to the Commission's approval of full normalization in D&O No. 8048 (8/20/84), in Docket No. 4691. The deferred taxes set up during those years are being reversed as book depreciation is taken on those capitalized items. As these capitalized costs are included in rate base in net plant in service, the deferred taxes associated with capitalized overhead are also included in rate base.

- d. 5. 28321 Conn Fee. Prior to 1986, certain contributions received from customers for service connection fees were required to be reported as income for tax purposes and allowed depreciation as 15 year utility property. For book purposes, these connection fees were treated as contributions in aid of construction. The deferred taxes created by the difference in book and tax treatment of these connection fees reversed as tax depreciation was recognized. As of the test year 2007, the deferred tax balances related to these connection fees should be fully reversed. To properly reflect the deferred tax balance for connection fees, this deferred tax balance should be reclassified to the deferred income tax liability associated with accelerated tax depreciation. This reclassification has been made on the updated MECO-WP-1305 provided on pages 15 and 16 of this response.
- d. 6. 28340 IRP/DSM Costs. DSM program expenses are recovered through a combination of base rates and the IRP Cost Recovery Provision. For those DSM program expenses recovered through base rates, there is no recovery reconciliation. No over-or under-recovery is included in rate base and there is no associated return mechanism. For those DSM program expenses recovered through the IRP Cost Recovery Provision, a reconciliation is performed at the end of each year to determine any over- or under-recovery. Interest, based on the current allowed rate of return, is calculated on the balance of any over-or under-recovery. The over- or under-recovery and calculated interest are then included in the IRP

Cost Recovery Provision in the following year. The over- or under-recovery is not included in rate base. For book purposes, DSM program costs are deferred when incurred and expensed when the related revenues are collected. For tax purposes, DSM program costs are deducted when incurred.

With respect to IRP related expenses, costs are recovered through base rates and not through a separate cost recovery provision. There is no recovery reconciliation for items in base rates. There are no over- or under-recoveries of IRP related expenses in rate base and no associated return mechanism and consequently, no book and tax difference.

Although MECO included the deferred taxes related to DSM in rate base in MECO-WP-1305, the Company believes the deferred taxes should have been excluded. Over- and under-recovered balances of deferred DSM and IRP costs are not included in rate base, so the related deferred tax balances should also be excluded from rate base. This is consistent with HELCO's treatment of its DSM and IRP deferred taxes in Docket No. 05-0315. The correction to exclude these deferred taxes has been reflected on the updated MECO-WP-1305 provided on pages 15 and 16 of this response.

- d. 7. 28400 Customer Information System. For book purposes, software development costs incurred in the preliminary project stage (Stage 1) are expensed. Please refer to Mr. Matsunaga's discussion in MECO T-9, pages 109 through 113. For tax purposes, costs incurred during "Stage 1" are required to be capitalized. These costs will be amortized over 36 months when placed in service pursuant to IRC §167(f). Software development costs are included in rate base within the O&M non-labor expense component of working cash. Thus, the deferred tax asset or liability associated with these costs should also be included in rate base.

- d. 8. 28403 Ellipse Software Costs. For book purposes, Ellipse fees were capitalized and amortized over its useful life. Originally, the Ellipse fees were amortized over a 2-year period commencing in June 2004. After 2004, the book life was extended to September 2007. For tax purposes, the Ellipse fees were amortized over a 36 month period and subject to bonus depreciation. This difference between book and tax amortizable lives generated an originating deferred tax asset. Ellipse fees are included in rate base within the O&M non-labor expense component of working cash. Thus, the deferred tax asset or liability associated with Ellipse fees should also be included in rate base.
- d. 9. 28404 Emission Fees Accrued. Emission fees are accrued monthly for book purposes but are not deducted for tax purposes until paid to the Hawaii State Department of Health by May 1<sup>st</sup> (extended due date) of the following year. This creates a temporary difference between the amount accrued in the current year (increases taxable income in current year) and the amount paid in the following year (decreases taxable income in the year fees are paid). Emission fees are included in rate base within the production O&M non-labor expense component of working cash. Thus, the deferred tax asset or liability associated with emission fees should also be included in rate base. Please refer to MECO-WP-1507, pages 23 and 24.
- d. 10. 28405 Hawaii R&D Credit. This balance should have fully reversed by the test year. The balance will be excluded from rate base. Please refer to the updated MECO-WP-1305, provided on pages 15 and 16 of this response.
- d. 11. 28406 Legal Fees Deferred for Tax. Legal fees related to purchased power contracts are expensed for book purposes and recovered through MECO's base rates within the O&M non-labor expense component of working cash. For tax purposes, legal fees related to purchased power contracts are deferred and amortized over the life of the purchased power

contracts. Accordingly, the deferred tax asset or liability associated with these legal expenses should also be included in rate base.

- d. 12. 28407 Oil Spill Cleanup. In 2002, MECO set up clean up reserves for anticipated expenses related to an oil spill and a transformer leak. The remaining liability is not included in rate base; consequently the associated deferred taxes should not be included in rate base. The deferred taxes for this item have been excluded on the updated MECO-WP-1305, provided on pages 15 and 16 of this response.
- d. 13. 28409 BPI Costs (previously labeled as Project Apprise Costs). Note: This sub account is being relabeled in this response to clarify the item for which deferred taxes have been recorded. In 1997, in a focused effort to improve operating efficiency, the Company incurred certain business process improvement (BPI) costs. By applying capital clearing percentages to total BPI costs, it was determined that \$142,846 was capitalized for book purposes. For tax purposes, BPI costs are deductible expenses. As these capitalized costs are included in rate base in net plant in service, the associated deferred taxes should also be included in rate base.
- e. The requested updated MECO-WP-1305 is provided on pages 15 and 16 of this response.
- f. AFUDC in CWIP

Construction work in progress ("CWIP") is excluded from rate base and has been excluded consistently in prior rate proceedings. This treatment is consistent with HECO's presentation in Docket No. 04-0113, for which interim D&O No. 22050 was issued, and also consistent with the rate base treatment used by the Commission in D&O No. 14412 (12/11/95), Docket No. 7766. Instead of including CWIP in rate base, an allowance for funds used during construction ("AFUDC") is accrued on CWIP balances. AFUDC



represents the cost of investor supplied funds used by a utility to pay for capital project costs during the project's construction period. The Company capitalizes and includes the cost of the project (including AFUDC) in rate base when the assets become used or useful, and begins depreciating the capitalized cost (including AFUDC) the following year.

AFUDC is not recognized for tax purposes and is neither taxable income nor part of the depreciable tax basis of the asset. Consequently, deferred income taxes are provided on the amount of AFUDC incurred and recognized as income for book purposes but not for tax purposes.

As previously indicated, CWIP, and the AFUDC charged thereto, are not capitalized and included in rate base until the asset becomes used or useful. Consequently, the deferred income tax liability provided on AFUDC should not be included in rate base as long as this AFUDC is in CWIP. This treatment is consistent with the previously cited interim D&O No. 22050 and D&O No. 14412 in Docket Nos. 04-0113 and 7766, respectively.

#### TCI in CWIP

The income tax law also requires the cost of financing self constructed assets to be capitalized, which MECO refers to as tax capitalized interest ("TCI"). §263A of the Internal Revenue Code requires interest related to self constructed assets to be capitalized during the construction period. This interest capitalization is the source of another book/tax temporary difference and creates a negative deferred income tax. The TCI is calculated on the costs (excluding AFUDC and other non-tax basis costs) charged to CWIP and assumes that construction is financed entirely by debt. Consequently, the deduction for a portion of

interest expense is deferred for income tax purposes and is subsequently deducted through tax depreciation.

Compliance with TCI rules increase current taxes immediately as incurred (i.e., the reduced interest deduction is taken as the asset is being constructed) and decreases taxes thereafter via tax depreciation. The impact on invested capital is immediate, and therefore, the related negative deferred income taxes should be an includable part of rate base as incurred.

In MECO's direct testimony (please see MECO-1305 and supporting workpapers MECO-WP-1305, pages 3 and 6), the negative deferred income tax liability related to TCI was incorrectly excluded from rate base. This error has been corrected, to include deferred taxes for TCI in rate base on the updated MECO-WP-1305 provided on pages 15 and 16 of this response.

Regulatory Asset for AFUDC Equity Gross Up (CWIP Equity Ongoing)

In evaluating CWIP and AFUDC and their impact on deferred income taxes, MECO ascertained that the regulatory asset amount of \$8,286,000 for CWIP Equity Ongoing (tax gross up) shown in MECO-1306, page 2 may be overstated to the extent that it relates to projects still in CWIP.

The tax gross up of AFUDC equity is capitalized to a regulatory asset (CWIP Equity Ongoing) pursuant to FAS 109 and is amortized over the life of the related assets. Due to the administrative burden of tracking the tax gross up to individual projects, MECO has applied an accounting convention assuming that this regulatory asset is placed into service equally over a four year period starting in the year the AFUDC is incurred.

Based on this convention, there is a portion of this regulatory asset that should be excluded from rate base because the related project costs are still in CWIP. The related deferred income taxes should similarly be excluded from rate base. The calculation of this adjustment will be provided in the June Update to MECO-1306 and the deferred tax effects are being included in the updated MECO-WP-1305, provided on pages 15 and 16 of this response.

**Maui Electric Company Limited**

Calculation of Deferred Tax Exclusion Related to the  
Excess and Executive Life Plans

12/31/2007

		DR (CR)	
		32.894737%	6.015038%
	DR (CR) Plan Liability	Federal Deferred Tax Liability	State Deferred Tax Liability
EXCESS PLAN			
12/31/2006 Excess Plan Liability per Actuary	(1,821)	599	110
Add 2007 Revised (Expense) Benefit	<u>562</u>	<u>(185)</u>	<u>(34)</u>
12/31/2007 Excess Plan Liability	<u>(1,259)</u>	<u>414</u>	<u>76</u>
EXECUTIVE LIFE PLAN			
12/31/2006 Executive Life Plan per Actuary	(849,512)	279,445	51,098
Add 2007 Revised (Expense) Benefit	<u>(94,382)</u>	<u>31,047</u>	<u>5,677</u>
12/31/2007 Executive Life Plan Liability	<u>(943,894)</u>	<u>310,491</u>	<u>56,776</u>

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Dr(Cr)	Actual Balance @ 12/31/06	Estimated 2006 Post YE Exp/(Benefit)	Reclassifications/ Adjustments	Adjusted Balance @ 12/31/06	Estimated 2007 Exp/(Benefit)	Estimated Balance @ 12/31/07
<b>Activity Description</b>						
28309 State ITC	3,707,546.00	223,916.00		3,931,462.00	52,108.00	3,983,570.00
28310 Rate Case Costs	0.00	(19,916.00)		(19,916.00)		(19,916.00)
28311 Rev Bond Diff	(349,945.00)			(349,945.00)	(496,064.00)	(846,009.00)
28312 Prepaid Expenses	(184,944.00)	(3,259.00)		(188,203.00)	(35,254.00)	(223,457.00)
28313 Uncoll Accts	49,100.00			49,100.00	0.00	49,100.00
28314 Computer Software Costs	41,074.00			41,074.00	27,086.00	68,160.00
28315 Cost of Removal	(3,851,421.00)			(3,851,421.00)	(436,184.00)	(4,287,605.00)
28316 Disc Wkrs Cmp	238,697.00	(553.00)		238,144.00	0.00	238,144.00
28317 Electric Disc Trust	(210,967.00)	(4,386.00)	215,353.00	0.00	0.00	0.00
28318 Penan Cst	(1,703,675.00)		(13,775.00)	(1,717,450.00)	1,320,025.00	(397,425.00)
28319 Cap Items Chg	(55,910.00)			(55,910.00)	7,035.00	(48,875.00)
28321 Conn Fee	43,506.00		(43,506.00)	0.00	0.00	0.00
28323 Cap Int	3,274,921.00	(37,019.00)		3,237,902.00	(160,817.00)	3,077,085.00
28324 CIAC	4,967,264.00	1,147.00		4,968,411.00	3,009,620.00	7,978,031.00
28325 Cust Adv	125,513.00			125,513.00	38,197.00	163,710.00
28326 Int IRS Adj	166,572.00	(117,730.00)		48,842.00	0.00	48,842.00
28327 Exec Incen Comp	127,856.00	(50,366.00)		77,490.00	0.00	77,490.00
28328 Vacation Accrual	(27,868.00)			(27,868.00)	0.00	(27,868.00)
28329 Tri-Isle Cable	0.00			0.00		0.00
28330 FMB Red Prem & Exp	0.00			0.00	0.00	0.00
28331 CWIP Debt Transition	(98,479.00)			(98,479.00)	8,774.00	(89,705.00)
28332 CWIP Equity Transition	(290,000.00)			(290,000.00)	25,839.00	(264,161.00)
28333 Plant Trans (AFUDC)	(613,869.00)			(613,869.00)	81,448.00	(532,421.00)
28334 FAS 109 Flow Through	(51,494.00)			(51,494.00)	24,316.00	(27,178.00)
28335 CWIP Equity Net	(4,362,982.00)			(4,362,982.00)	54,507.00	(4,308,475.00)
28336 CWIP Debt	(2,240,850.00)			(2,240,850.00)	41,387.00	(2,199,463.00)
28337 CWIP Equity Gross-Up	(2,778,884.00)			(2,778,884.00)	34,717.00	(2,744,167.00)
28338 Reg Liab Fed ITC	604,509.00			604,509.00	(115,252.00)	489,257.00
28339 OPEB	569,671.00		(215,353.00)	354,318.00	185,210.00	539,528.00
28340 IRP/DSM Costs	(373,233.00)			(373,233.00)	0.00	(373,233.00)
28341 Excess Def Tax	(960.00)			(960.00)	960.00	0.00
28342 Deficit Def Tax	18,560.00			18,560.00	(2,511.00)	16,049.00
28343 Gen Liab Reserve	32,894.00			32,894.00	0.00	32,894.00
28344 G(L) on ACRS Retirals	(1,469,439.00)			(1,469,439.00)	(16,447.00)	(1,485,886.00)
28400 Customer Information System	64,051.00			64,051.00	1,075.00	65,126.00
28401 Deloitte & Touche Fees	0.00			0.00		0.00
28402 Electric Vehicle Credit	0.00			0.00		0.00
28403 Ellipse Software Costs	6,398.00	(1,052.00)		5,346.00	(5,346.00)	0.00
28404 Emission Fees Accrued	164,664.00			164,664.00	166,812.00	331,476.00
28405 Hawaii R&D Credit	748.00	(748.00)		0.00	0.00	0.00
28406 Legal Fees Deferred for Tax	5,304.00			5,304.00	0.00	5,304.00
28407 Oil Spill Clean-Up	121,381.00			121,381.00	0.00	121,381.00
28408 Percentage Repair Allowance	(123,082.00)			(123,082.00)	9,231.00	(113,851.00)
28409 BPI Costs	(22,013.00)			(22,013.00)	2,097.00	(19,916.00)
28410 QUIPS Amortization	(178,911.00)			(178,911.00)	8,487.00	(170,424.00)
28411 \$ 481 Adjustment	-			0.00		0.00
28412 Sun Power for Schools	0.00			0.00	0.00	0.00
28413 Other	3.00			3.00		3.00
28414 Deferred Comp-Restricted Stock	(21,787.00)			(21,787.00)		(21,787.00)
28415 FIN 48 Adjustments	0.00			0.00	517,376.00	517,376.00
28416 Implementation of SFAS 158	7,744,884.00			7,744,884.00	(482,727.00)	7,262,157.00
<b>Total Balance Account 283.01</b>	<b>3,064,403.00</b>	<b>(9,966.00)</b>	<b>(57,281.00)</b>	<b>2,997,156.00</b>	<b>3,865,705.00</b>	<b>6,862,861.00</b>
<b>Total Bal Acct 282.01 Accel Deprn</b>	<b>(13,834,645.00)</b>	<b>550,302.00</b>	<b>43,506.00</b>	<b>(13,240,837.00)</b>	<b>605,140.00</b>	<b>(12,635,697.00)</b>
<b>Total Deferred Tax Balance</b>						
Before Rate Case Adjustments	(10,770,242.00)	540,336.00	(13,775.00)	(10,243,681.00)	4,470,845.00	(5,772,836.00)
<b>Rate Case Adjustments:</b>						
28326 Int IRS Adj	(166,572.00)	117,730.00		(48,842.00)	0.00	(48,842.00)
28327 Exec Incen Comp	(127,856.00)	50,366.00		(77,490.00)	0.00	(77,490.00)
28328 Vacation Accrual	27,868.00	0.00		27,868.00	0.00	27,868.00
28313 Uncoll Accts Allow	(49,100.00)	0.00		(49,100.00)	0.00	(49,100.00)
28316 Disc Wkrs Cmp	(238,697.00)	553.00		(238,144.00)	0.00	(238,144.00)
28343 Gen Liab Reserve	(32,894.00)	0.00		(32,894.00)	0.00	(32,894.00)
28318 Penan Cst (nonqual)	(599.00)	0.00		(599.00)	185.00	(414.00)
28310 Rate Case Costs	0.00	19,916.00		19,916.00	0.00	19,916.00
28339 OPEB Exec Life	(279,445.00)	0.00		(279,445.00)	(31,047.00)	(310,492.00)
28340 IRP/DSM Costs	373,233.00	0.00		373,233.00	0.00	373,233.00
28407 Fuel/Oil Spill Liab Reserve	(121,381.00)	0.00		(121,381.00)	0.00	(121,381.00)
28414 Deferred Comp-Restricted Stock	21,787.00			21,787.00	0.00	21,787.00
28415 FIN 48 Adjustments	0.00			0.00	(517,376.00)	(517,376.00)
AFUDC in CWIP	1,015,303.00			1,015,303.00	(213,615.00)	801,688.00
Reg. Asset-AFUDC Eq Grossup	444,618.00			444,618.00	(95,262.00)	349,356.00
<b>Total Federal Deferred Tax Balance</b>						
After Rate Case Adjustments	(9,903,977.00)	728,901.00	(13,775.00)	(9,188,851.00)	3,613,730.00	(5,575,121.00)
<b>Ratemaking Adjustment:</b>						
28416 SFAS 158	(7,744,884.00)	0.00	0.00	(7,744,884.00)	482,727.00	(7,262,157.00)
<b>Total Federal Deferred Tax Bal</b>	<b>(17,648,861.00)</b>	<b>728,901.00</b>	<b>(13,775.00)</b>	<b>(16,933,735.00)</b>	<b>4,096,457.00</b>	<b>(12,837,278.00)</b>

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Dr(Cr)	Actual Balance @ 12/31/06	Estimated 2006 Post YE Exp/(Benefit)	Reclassifications/ Adjustment	Adjusted Balance @ 12/31/06	Estimated 2007 Exp/(Benefit)	Estimated Balance @ 12/31/07
Activity Description						
na State ITC	677,951.00	40,945.00		718,896.00	9,528.00	728,424.00
28350 Rate Inc Appt	0.00	(3,642.00)		(3,642.00)		(3,642.00)
28351 Rev Bond Diff	(63,990.00)			(63,990.00)	(90,709.00)	(154,699.00)
28352 Prepaid Expenses	(33,818.00)	(596.00)		(34,414.00)	(6,446.00)	(40,860.00)
28353 Uncoll Accts	8,978.00			8,978.00	0.00	8,978.00
28354 Computer Software Costs	8,228.00			8,228.00	3,166.00	11,394.00
28355 Cost of Removal	(702,919.00)			(702,919.00)	(79,759.00)	(782,678.00)
28356 Disc Wkrs Cmp	43,648.00	(101.00)		43,547.00	0.00	43,547.00
28357 Electric Disc Trust	(38,578.00)	(802.00)	39,380.00	0.00	0.00	0.00
28358 Pensn Cst	(311,535.00)		(2,513.00)	(314,048.00)	241,376.00	(72,672.00)
28359 Cap Items Chg	(10,224.00)			(10,224.00)	1,286.00	(8,938.00)
28361 Conn Fee	2,074.00		(2,074.00)	0.00	0.00	0.00
28363 Cap Int	617,424.00	(6,769.00)		610,655.00	(31,181.00)	579,474.00
28364 CIAC	897,498.00	209.00		897,707.00	548,734.00	1,446,441.00
28365 Cust Adv	22,952.00			22,952.00	6,985.00	29,937.00
28366 Int IRS Adj	30,459.00	(21,528.00)		8,931.00	0.00	8,931.00
28367 Exec Incn Comp	39,828.00	(9,209.00)		30,619.00	0.00	30,619.00
28368 Vacation Accrual	(5,096.00)			(5,096.00)	0.00	(5,096.00)
28369 Tri-Isle Cable	0.00			0.00		0.00
28370 FMB Red Prem & Exp	0.00			0.00	0.00	0.00
28371 CWIP Debt Transition	(18,008.00)			(18,008.00)	1,604.00	(16,404.00)
28372 CWIP Equity Transition	(53,029.00)			(53,029.00)	4,724.00	(48,305.00)
28373 Plant Trans (AFUDC)	(112,249.00)			(112,249.00)	14,893.00	(97,356.00)
28374 FAS 109 Flow Through	(9,416.00)			(9,416.00)	4,446.00	(4,970.00)
28375 CWIP Equity Net	(797,803.00)			(797,803.00)	9,967.00	(787,836.00)
28376 CWIP Debt	(409,755.00)			(409,755.00)	7,568.00	(402,187.00)
28377 CWIP Equity Gross-Up	(508,138.00)			(508,138.00)	6,348.00	(501,790.00)
28378 Reg Liab Fed ITC	110,539.00			110,539.00	(21,075.00)	89,464.00
28380 OPEB	104,168.00		(39,380.00)	64,788.00	33,867.00	98,655.00
28381 IRP/DSM Costs	(68,249.00)			(68,249.00)	0.00	(68,249.00)
28382 Excess Def Tax	(175.00)			(175.00)	175.00	0.00
28383 Deficit Def Tax	3,394.00			3,394.00	(459.00)	2,935.00
28384 Gen Liab Reserve	6,016.00			6,016.00	0.00	6,016.00
28385 G/L on ACRS Retirals	(270,925.00)			(270,925.00)	(3,008.00)	(273,933.00)
28450 Customer Information System	11,712.00			11,712.00	197.00	11,909.00
28451 Deloitte & Touche Fees	0.00			0.00		0.00
28452 Electric Vehicle Credit	0.00			0.00		0.00
28453 Ellipse Software Costs	2,728.00	(1,292.00)		1,436.00	(1,436.00)	0.00
28454 Emission Fees Accrued	30,109.00			30,109.00	30,503.00	60,612.00
28455 Hawaii R&D Credit	137.00	(137.00)		0.00	0.00	0.00
28456 Legal Fees Deferred for Tax	970.00			970.00	0.00	970.00
28457 Oil Spill Clean-Up	22,196.00			22,196.00	0.00	22,196.00
28458 Percentage Repair Allowance	(36,978.00)			(36,978.00)	2,773.00	(34,205.00)
28459 BPI Costs	(4,025.00)			(4,025.00)	383.00	(3,642.00)
28460 QUIPS Amortization	(32,715.00)			(32,715.00)	1,552.00	(31,163.00)
28461 § 481 Adjustment	0.00			0.00		0.00
28462 Sun Power for Schools	0.00			0.00		0.00
28463 Other	3.00			3.00		3.00
28464 Deferred Comp-Restricted Stock	(3,984.00)			(3,984.00)		(3,984.00)
28465 FIN 48 Adjustments	0.00			0.00	88,642.00	88,642.00
28466 Implementation of SFAS 158	1,416,206.00			1,416,206.00	(88,271.00)	1,327,935.00
Total Balance Account 283.02	565,609.00	(2,922.00)	(4,587.00)	558,100.00	696,373.00	1,254,473.00
Total Bal Acct 282.02 Accel Deprn	(1,660,658.00)	100,627.00	2,074.00	(1,557,957.00)	18,044.00	(1,539,913.00)
Total Deferred Tax Balance Before Rate Case Adjustments	(1,095,049.00)	97,705.00	(2,513.00)	(999,857.00)	714,417.00	(285,440.00)
Rate Case Adjustments:						
28366 Int IRS Adj	(30,459.00)	21,528.00		(8,931.00)	0.00	(8,931.00)
28367 Exec Incn Comp	(39,828.00)	9,209.00		(30,619.00)	0.00	(30,619.00)
28368 Vacation Accrual	5,096.00	0.00		5,096.00	0.00	5,096.00
28353 Uncoll Accts Allow	(8,978.00)	0.00		(8,978.00)	0.00	(8,978.00)
28356 Disc Wkrs Cmp	(43,648.00)	101.00		(43,547.00)	0.00	(43,547.00)
28384 Gen Liab Reserve	(6,016.00)	0.00		(6,016.00)	0.00	(6,016.00)
28358 Pensn Cst (nonqual)	(110.00)	0.00		(110.00)	34.00	(76.00)
28350 Rate Case Costs	0.00	3,642.00		3,642.00	0.00	3,642.00
28380 OPEB Exec Life	(51,098.00)			(51,098.00)	(5,677.00)	(56,775.00)
28381 IRP/DSM Costs	68,249.00	0.00		68,249.00	0.00	68,249.00
28457 Fuel/Oil Spill Liab Reserve	(22,196.00)	0.00		(22,196.00)	0.00	(22,196.00)
28464 Deferred Comp-Restricted Stock	3,984.00			3,984.00	0.00	3,984.00
28465 FIN 48 Adjustments	0.00			0.00	(88,642.00)	(88,642.00)
AFUDC in CWIP	185,655.00			185,655.00	(39,061.00)	146,594.00
Reg. Asset-AFUDC Eq Grossup	81,301.00			81,301.00	(17,419.00)	63,882.00
Total Deferred Tax Balance After Rate Case Adjustments	(953,097.00)	132,185.00	(2,513.00)	(823,425.00)	563,652.00	(259,773.00)
Rate-making Adjustment:						
28466 SFAS 158	(1,416,206.00)	0.00	0.00	(1,416,206.00)	88,271.00	(1,327,935.00)
Total State Deferred Tax Bal	(2,369,303.00)	132,185.00	(2,513.00)	(2,239,631.00)	651,923.00	(1,587,708.00)

CA-IR-183

**Ref: MECO T-13, page 35 - (Changes in Tax Payments - Working Cash Effects)**

Please provide copies of the calculations and the referenced authoritative regulations relied upon to revise the Company's tax payment timing for measurement of Working Cash.

**MECO Response:**

The calculations are provided in Ms. Gayle Ohashi's testimony, MECO T-15, and supporting workpapers at MECO-WP-1507, page 30, feeding into the working cash exhibits MECO-1507, MECO-1513 and MECO-1519. The Company relied on the proposed Treasury Regulations §1.6655-2 (see attached pages 2-16 of this response).

**Prop Reg § 1.6655-2. Annualized income installment method.**

**(a) In general.** In the case of any required installment, if the corporation establishes that the annualized income installment determined under this section, or the adjusted seasonal installment determined under §1.6655-3, is less than the amount determined under §1.6655-1—

- (1) The amount of such required installment shall be the annualized income installment (or, if less, the adjusted seasonal installment); and
- (2) Any reduction in a required installment resulting from the application of this section will be recaptured by increasing the amount of the next required installment determined under §1.6655-1 by the amount of such reduction (and, if the next required installment is similarly reduced, by increasing subsequent required installments to the extent that the reduction has not previously been recaptured).

**(b) Determination of annualized income installment—In general.** In the case of any required installment, the annualized income installment is the excess (if any) of—

- (1) The product of the applicable percentage and the tax for the taxable year computed by annualizing the taxable income and alternative minimum taxable income—
  - (i) For the first 3 months of the taxable year, in the case of the first required installment;
  - (ii) For the first 3 months of the taxable year, in the case of the second required installment;
  - (iii) For the first 6 months of the taxable year in the case of the third required installment; and
  - (iv) For the first 9 months of the taxable year, in the case of the fourth required installment; over
- (2) The aggregate amount of any prior required installments for the taxable year.

**(c) Special rules.**

(1) *Applicable percentage.* Except as otherwise provided in §1.6655-5(d) with respect to short taxable years—

In the case of the following required installments:	The applicable percentage is:
1st.....	25
2nd.....	50
3rd.....	75
4th.....	100

(2) *Partial month.* Except as otherwise provided, for purposes of paragraph (b) of this section a partial month shall be treated as a month.

**(d) Election of different annualization periods.**

(1) If the taxpayer timely files Form 8842, "Election to Use Different Annualization Periods for Corporate Estimated Tax," in accordance with section 6655(e)(2)(C)(iii), and elects Option 1—



(i) Paragraph (b)(1)(i) of this section will be applied by using the language "2 months" instead of "3 months";

(ii) Paragraph (b)(1)(ii) of this section will be applied by using the language "4 months" instead of "3 months";

(iii) Paragraph (b)(1)(iii) of this section will be applied by using the language "7 months" instead of "6 months"; and

(iv) Paragraph (b)(1)(iv) of this section will be applied by using the language "10 months" instead of "9 months".

(2) If the taxpayer timely files Form 8842, in accordance with section 6655(e)(2)(C)(iii), and elects Option 2—

(i) Paragraph (b)(1)(ii) of this section will be applied by using the language "5 months" instead of "3 months";

(ii) Paragraph (b)(1)(iii) of this section will be applied by using the language "8 months" instead of "6 months"; and

(iii) Paragraph (b)(1)(iv) of this section will be applied by using the language "11 months" instead of "9 months".

**(e) 52-53 week taxable year.**

(1) Generally, in the case of a taxpayer whose taxable year constitutes 52 or 53 weeks in accordance with section 441(f), the rules prescribed by §1.441-2 shall be applicable in determining—

(i) Whether a taxable year is a taxable year of 12 months; and

(ii) When the 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, or 11-month period (whichever is applicable) commences and ends for purposes of paragraphs (b)(1), (d)(1) and (d)(2) of this section.

(2) If a taxpayer employs four 13-week periods or thirteen 4-week accounting periods and the end of any accounting period employed by the taxpayer does not correspond to the end of the 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, or 11-month period (whichever is applicable), then, provided the taxpayer has at least one full 4-week or 13-week accounting period, as appropriate, within the applicable period, annualized taxable income for the applicable period shall be—

(i)  $[(x/(y*13))*z]$ , in the case of a taxpayer using four 13-week periods, if—

(A)  $x$  = Taxable income for the number of full 13-week periods in the applicable period;

(B)  $y$  = The number of full 13-week periods in the applicable period; and

(C)  $z$  = The number of weeks in the taxable year; or

(ii)  $[(x/(y*4))*z]$ , in the case of a taxpayer using thirteen 4-week periods, if—

(A)  $x$  = Taxable income for the full 4-week periods in the applicable period;

(B)  $y$  = The number of full 4-week periods in the applicable period; and

(C)  $z$  = The number of weeks in the taxable year.

(3) If a taxpayer employs four 13-week periods and the taxpayer does not have at least one 13-week period within the applicable 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, or 11-month period, the taxpayer shall be permitted to determine annualized taxable income for the applicable period based upon—

(i) The taxable income for the number of weeks in the applicable period; or

(ii) The taxable income for the full 13-week periods that end before the due date of the required installment.

(4) The following examples illustrate the rules of this paragraph (e):

*Example (1).* Taxpayer A, an accrual method taxpayer, uses a 52/53 week year-end ending on the last Friday in December and uses four thirteen-week periods. For its year beginning December 30, 2006, A uses the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installments. For purposes of computing its first and second required installments, the first 3 months of A's taxable year under paragraph (b)(1)(i) of this section will end on March 30th, the thirteenth Friday of A's taxable year. For purposes of its third required installment, the first 6 months of A's taxable year will end on June 29th, the twenty-sixth Friday of A's taxable year. For purposes of its fourth required installment, the first 9 months of A's taxable year will end on September 28th, the thirty-ninth Friday of A's taxable year.

*Example (2).* Same facts as Example 1 except that A uses thirteen four-week periods and there are 52 weeks during A's taxable year beginning December 30, 2006, and ending December 28, 2007. For purposes of computing A's first and second required installments, A's annualized taxable income for the first three months will be the taxable income for the first three four-week periods of A's taxable year (December 30, 2006, through March 23, 2007) divided by 12 (number of full four-week periods in the first three months (3) multiplied by 4) and multiplied by 52 (the number of weeks in the taxable year). For purposes of computing A's third required installment, A's annualized taxable income for the first six months will be the taxable income for the first six four-week periods of A's taxable year (December 30, 2006, through June 15, 2007) divided by 24 and multiplied by 52. For purposes of computing A's fourth required installment, A's annualized taxable income for the first nine months will be the taxable income for the first nine four-week periods of A's taxable year (December 30, 2006, through September 7, 2007) divided by 36 and multiplied by 52.

(5) The application of the annualized income installment method is illustrated by the following example:

*Example.* (i) X, a calendar year corporation, had a taxable year of less than twelve months for tax year 2005 and no credits against tax for tax year 2006. X made an estimated tax payment of \$15,000 on the installment dates of April 17, 2006, June 15, 2006, September 15, 2006, and December 15, 2006, respectively. Assume that, under paragraph (d)(1) of this section, X elected Option 1 by timely filing Form 8842, in accordance with section 6655(e)(2)(C)(iii), and determined that its taxable income for the first 2, 4, 7 and 10 months was \$25,000, \$64,000, \$125,000, and \$175,000 respectively. The income for each period is annualized as follows:

$\$25,000 \times 12/2 = \$150,000$   
 $\$64,000 \times 12/4 = \$192,000$   
 $\$125,000 \times 12/7 = \$214,286$   
 $\$175,000 \times 12/10 = \$210,000$

(ii) (A) To determine whether the installment payment made on April 17, 2006, equals or exceeds the amount that would have been required to have been paid if the estimated tax were equal to 100 percent of the tax computed on the annualized income for the 2-month period, the following computation is necessary:

- (1) Annualized income for the 2 month period—\$150,000
- (2) Tax on this paragraph (e)(5), Example (ii)(A)(1)—41,750
- (3) 100% of this paragraph (e)(5), Example (ii)(A)(2)—41,750
- (4) 25% of this paragraph (e)(5), Example (ii)(A)(3)—10,438

(B) Because the total amount of estimated tax that was timely paid on or before the first installment date (\$15,000) exceeds the amount required to be paid on or before this date if the estimated tax were 100 percent of the tax determined by placing on an annualized basis the taxable income for the first 2-month period, the exception described in paragraphs (a) and (b) of this section applies, and no addition to tax will be imposed for the installment due on April 15, 2006.

(iii) (A) To determine whether the installment payments made on or before June 15, 2006, equal or exceed the amount that would have been required to have been paid if the estimated tax were equal to 100 percent of the tax computed on the annualized income for the 4-month period, the following computation is necessary:

- (1) Annualized income for the 4 month period—\$192,000
- (2) Tax on this paragraph (e)(5), Example (iii)(A)(1)—58,130
- (3) 100% of this paragraph (e)(5), Example (iii)(A)(2)—58,130
- (4) 50% of this paragraph (e)(5), Example (iii)(A)(3) less \$10,438 (amount due with the first installment)—18,627

(B) Because the total amount of estimated tax actually paid on or before the second installment date (\$19,562 (\$15,000 second required installment payment plus \$4,562 overpayment of first required installment)) exceeds the amount required to be paid on or before this date if the estimated tax were 100 percent of the tax determined by placing on an annualized basis the taxable income for the first 4-month period, the exception described in paragraphs (a) and (b) of this section applies, and no addition to tax will be imposed for the installment due on June 15, 2006.

(iv) (A) To determine whether the installment payments made on or before September 15, 2006, equal or exceed the amount that would have been required to have been paid if the estimated tax were equal to 100 percent of the tax computed on the annualized income for the 7-month period, the following computation is necessary:

- (1) Annualized income for the 7 month period—\$214,286
- (2) Tax on this paragraph (e)(5), Example (iv)(A)(1)—66,821
- (3) 100% of this paragraph (e)(5), Example (iv)(A)(2)—66,821
- (4) 75% of this paragraph (e)(5), Example (iv)(A)(3) less \$29,065 (amount due with the first and second installment)—21,051

(B) Because the total amount of estimated tax actually paid on or before the third installment date (\$15,935 (\$15,000 third required installment payment plus \$935 overpayment of second required installment)) does not equal or exceed the amount required to be paid on or before this date if the estimated tax were 100 percent of the tax determined by placing on an annualized basis the taxable income for the first 7-month period, the exception described in paragraphs (a) and (b) of this section does not apply, and an addition to tax will be imposed with respect to the underpayment of the September 15, 2006, installment unless another exception applies to this installment payment.

(v) (A) To determine whether the installment payments made on or before December 15, 2006, equal or exceed the amount that would have been required to have been paid if the estimated tax were equal to 100 percent of the tax computed on the annualized income for the 10-month period, the following computation is necessary:

(1) Annualized income for the 10 month period—\$210,000

(2) Tax on this paragraph (e)(5), Example (v)(A)(1)—65,150

(3) 100% of this paragraph (e)(5), Example (v)(A)(2)—65,150

(4) 100% of this paragraph (e)(5), Example (v)(A)(3) less \$50,116 (amount due with the first, second, and third installment)—15,034

(B) Because the total amount of estimated tax payments made on or before the fourth installment date that is available to be applied to the estimated tax due for the fourth installment (\$9,884 (\$15,000 fourth required installment payment less \$5,116 underpayment for the third installment of estimated tax (\$21,051 third installment of estimated tax due less \$15,935 payments available to be applied to the third installment of estimated tax))) does not equal or exceed the amount required to be paid on or before this date if the estimated tax were 100 percent of the tax determined by placing on an annualized basis the taxable income for the first 10-month period, the exception described in paragraphs (a) and (b) of this section does not apply, and an addition to tax will be imposed with respect to the underpayment of the December 15, 2006, installment unless another exception applies to this installment payment.

(vi) Assuming that no other exceptions apply and the addition to tax is computed under section 6621(a)(2) at the rate of 8 percent per annum for the applicable periods of underpayment, the amount of the addition to tax is as follows:

(A) First installment (no underpayment)

(B) Second installment (no underpayment)

(C) Third installment (underpayment period 9-16-06 through 12-15-06), computed as  $91/365 \times \$5,116 \times 8\%$ —102

(D) Fourth installment (underpayment period 12-16-06 through 3-15-07), computed as  $90/365 \times \$5,150 \times 8\%$ —102

(E) Total of this paragraph (e)(5), Example (vi)(A) through (D)— 204

**(f) Determination of taxable income for an annualization period.**

(1) *In general.* In determining the applicability of the exception described in paragraphs (a) and (b) of this section (relating to the annualization of income) and the exception described in §1.6655-3 (relating to annualization of income for corporations with seasonal income), and for purposes of computing a taxpayer's taxable income (and applicable tax), an item must be taken into account in computing a taxpayer's taxable income for the taxable year for which the

estimated tax is being determined, and must be properly taken into account in determining a taxpayer's taxable income (and applicable tax) for the applicable annualization period by the last day of such period. Generally, except as provided in paragraph (f)(2) of this section, for an item to be taken into account during an annualization period, the following must occur on or before the last day of the applicable annualization period (determined based on the accounting period employed by the taxpayer):

(i) With respect to an item of gross income, such income is includible in computing taxable income in accordance with section 451 or the appropriate provision of the Internal Revenue Code (for example, section 453 for installment sales or section 460 for long-term contracts).

(ii) With respect to an item of loss, the loss must be permitted to be taken into account under the appropriate provision of the Internal Revenue Code.

(iii) With respect to an item of deduction, for taxpayers using the cash receipts and disbursements method of accounting, the deduction must be paid under §1.461-1(a)(1) and otherwise deductible in computing taxable income for the annualization period or, for taxpayers using an accrual method of accounting, the deduction must be incurred under §1.461-1(a)(2) and otherwise deductible in computing taxable income for the annualization period. In the case of an accrual method taxpayer, the provisions of section 170(a)(2) and §1.170A-11(b) (charitable contributions by accrual method corporations), §1.461-4(d)(6)(ii) (provision of services or property to a taxpayer), §1.461-5 (recurring item exception), and any other provision that has a similar effect can not be used in determining whether the item of deduction has been incurred under §1.461-1(a)(2) and is otherwise deductible for purposes of computing taxable income for an annualization period. For purposes of section 404 and the regulations, regardless of the overall method of accounting employed by the taxpayer, the applicable 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, or 11- month period shall not be treated as a short taxable year and the rules of section 404 and the regulations shall be applied on the basis of the taxpayer's taxable year for which estimated tax is being determined. Thus, the determination of whether a payment to an employee is deferred compensation under §1.404(b)-1T shall be made by reference to whether the payment is received by the employee more than a brief period of time after the last day of the taxable year for which estimated tax is being determined and not the last day of the applicable annualization period. With respect to contributions to qualified plans governed by section 404 and the regulations, in determining whether an item is paid or incurred by the end of an annualization period, economic performance is satisfied only to the extent such item is paid by the last day of the applicable annualization period (without regard to section 404(a)(6)) and does not, in combination with other such items paid during the applicable annualization period, exceed the applicable deduction limit of section 404(a) for the taxable year. For purposes of sections 419 and 419A and the regulations, regardless of the overall method of accounting employed by the taxpayer, the applicable 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, or 11-month period shall not be treated as a short taxable year and the rules of sections 419 and 419A and the regulations shall be applied on the basis of the taxpayer's taxable year for which estimated tax is being determined. With respect to contributions to a welfare benefit fund governed by sections 419 and 419A and the regulations, in determining whether an item is paid or incurred by the end of an annualization period, economic performance is satisfied only to the extent such item is paid by the last day of the applicable annualization period and does not, in combination with other such items paid during such annualization period, exceed the applicable deduction limit of section 419 for the taxable year.

(iv) With respect to depreciation and amortization (depreciation) expense, a taxpayer shall take into account depreciation expense only as provided in paragraph (f)(2)(v) of this section.

(v) With respect to any item taken into account in computing taxable income for the annualization period that is not described in paragraphs (f)(1)(i), (ii), (iii), and (iv) of this section, the item is includible in computing taxable income in accordance with the appropriate provision of the Internal Revenue Code.

(vi) With respect to an item of credit, the amounts upon which the credit is computed must have been taken into account in computing taxable income for the annualization period pursuant to paragraphs (f)(1)(i), (ii), (iii), (iv), and (v) of this section, as applicable.

*(2) Exceptions.*

(i) Annual expenses paid or incurred at or after the end of the taxable year.

(A) Except as otherwise provided in paragraphs (f)(2)(ii) through (vi) of this section, if an accrual method taxpayer has a history of incurring a specific item of expense under §1.461-1(a)(2) (or a cash method taxpayer has a history of paying a specific item of expense under §1.461-1(a)(1)) that, while attributable to income earned throughout the current taxable year, is not incurred (or paid, in the case of a cash method taxpayer) until the end of the taxable year, or after the end of the current taxable year and is deemed incurred (or paid, in the case of a cash method taxpayer) during the current taxable year (taking into account, as applicable, section 170(a)(2) and §1.170A-11(b), section 404(a)(6), §1.461-4(d)(6)(ii), §1.461-5, and any other provision that has a similar effect), then the taxpayer may, in lieu of any amount determined under paragraph (f)(1) of this section, take into account for the applicable annualization period the amount of such expense properly allocable to such period provided the amount so allocated to such annualization period is determinable with reasonable accuracy and the amount of the item so allocated is properly deducted by the taxpayer during the current taxable year under the taxpayer's method of accounting.

(B) For purposes of this paragraph (f)(2)(i), the portion of an annual expense item allocable to an annualization period will be considered to be determined with reasonable accuracy if such item is allocated evenly throughout the taxable year unless the taxpayer is able to clearly demonstrate such item is more appropriately allocable to an annualization period by some other method including, for example, in proportion to the earning of revenue, the use of property, or the provision of services. For purposes of this paragraph (f)(2)(i), a taxpayer has a history of incurring or paying a specific item of expense at the end of the taxable year, or after the end of the taxable year that is deemed incurred or paid during the taxable year, if, in each of the two taxable years immediately preceding the current taxable year (or the immediately preceding taxable year if the taxpayer was not in existence for the two preceding taxable years), the taxpayer incurred or paid the specific item of expense at the end of each taxable year, or after the end of each taxable year that was deemed incurred or paid during such taxable year. In addition, for purposes of this paragraph (f)(2)(i), the term "the end of the taxable year" means the period between and including the 15th and last day of the last month of the taxable year.

(ii) Net operating loss carryover. Any net operating loss carryover to the current taxable year shall be taken into account in computing an annualized income installment only after annualizing the taxable income for the annualization period.

(iii) Credit carryover. Any credit carryover to the current taxable year shall be taken into account in computing an annualized income installment only after annualizing the taxable income for the annualization period and computing the applicable tax, and before applying the applicable percentage.

(iv) Section 481(a) adjustment.

(A) Any section 481(a) adjustment required to be recognized during the taxable year shall be recognized ratably over the number of months in the taxable year.

(B) With respect to a Form 3115, "Application for Change in Accounting Method," filed during the current taxable year or a preceding taxable year, if the change in method of accounting—

(1) Is permitted to be made with the automatic consent of the Commissioner, the appropriate portion of the section 481(a) adjustment determined under paragraph (f)(2)(iv)(A) of this section shall be taken into account in determining an annualized income installment if, and only if, the copy of the Form 3115 has been mailed to the IRS National Office on or before the last day of the annualization period; or

(2) Requires the prior consent of the Commissioner, the appropriate portion of the section 481(a) adjustment determined under paragraph (f)(2)(iv)(A) of this section shall be taken into account in determining an annualized income installment if, and only if, the consent agreement reflecting the Commissioner's consent to the change in method of accounting and the prescribed terms and conditions for effecting such change has been signed by the taxpayer and mailed to the IRS National Office on or before the last day of the annualization period.

(v) Depreciation and amortization.

(A) General rule. In determining any annualized income installment, a proportionate amount of the taxpayer's estimated annual depreciation and amortization (depreciation) expense shall be taken into account. For purposes of the preceding sentence, estimated annual depreciation expense is the estimated depreciation expense to be properly taken into account in determining the taxpayer's taxable income for the taxable year. In determining the estimated annual depreciation expense, a taxpayer may take into account purchases, sales or other dispositions, changes in use, depreciation deductions permitted under sections 168(k) and 1400L(b), and other similar events and provisions (for example, section 179) that, based on all the relevant information available as of the last day of the annualization period (such as capital spending budgets, financial statement data and projections, or similar reports that provide evidence of the taxpayer's capital spending plans for the current taxable year), are reasonably expected to occur or apply during the taxable year. For purposes of the additional first-year depreciation deduction under sections 168(k) and 1400L(b), only a proportionate amount of the current year's additional first-year depreciation deduction to be taken into account in determining a taxpayer's taxable income for the taxable year is taken into account in computing taxable income for an annualization period. As an alternative to estimating annual depreciation expense based on events that are reasonably expected to occur, a taxpayer may claim for an annualization period at least a proportionate amount of 50 percent of the taxpayer's estimated depreciation expense for the current taxable year attributable to assets that a taxpayer had in service on the last day of the preceding taxable year, that remain in service on the first day of the current taxable year, and that are subject to the half-year convention.

(B) Short taxable years. Unless the taxable year is, or will be, a short taxable year, in no circumstance may an annualization period be treated as a short taxable year for purposes of determining the depreciation allowance for such annualization period. If the taxable year is, or will be (based on all relevant information available as of the last day of the annualization period), a short

taxable year, annual depreciation expense shall be computed using the rules applicable for computing depreciation during a short taxable year for purposes of determining the annual depreciation expense to be allocated to an annualization period. For this purpose, the rules applicable for computing depreciation during a short taxable year shall be applied on the basis of the date the taxable year is expected to end based on all relevant information available as of the last day of the annualization period. See Rev. Proc. 89-15 (1989-1 C.B. 816), (see § 601.601(d)(2)(ii)(b) of this chapter).

(vi) Member of partnership. In determining a partner's distributive share of partnership items that must be taken into account during an annualization period, the rules set forth in §1.6654-2(d)(2) are applicable.

(3) *Examples.* The provisions of this paragraph (f) are illustrated by the following examples:

*Example (1).* Corporation A, a calendar year taxpayer, uses an accrual method of accounting and uses the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2006 taxable year. Consistent with its historical practice, the board of directors of A, on or before March 31, 2006, make a binding, irrevocable commitment to fund a minimum contribution of \$10,000,000 to A's qualified retirement plan by March 15, 2007, which fixes A's liability to make the \$10,000,000 contribution. Similarly, consistent with A's historical practice, A plans to remit payments to the retirement plan of \$1,000,000 on January 2, 2007, and \$9,000,000 on March 1, 2007. The \$10,000,000 commitment is not taken into account for purposes of determining A's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year, because A did not make any payments by March 31, 2006 (and therefore did not satisfy the economic performance requirements of §1.461-4(d)(2)(iii) by March 31, 2006), in accordance with paragraph (f)(1)(iii) of this section. The \$10,000,000 is not treated as paid on or before March 31, 2006, under section 404(a)(6) because, pursuant to paragraph (f)(1)(iii) of this section, the last day of the annualization period is not to be treated as the last day of A's taxable year. However, pursuant to paragraph (f)(2)(i)(A) of this section, because A has historically incurred a retirement plan expense during the taxable year pursuant to section 404 that, but for the deeming rule of section 404(a)(6), would have been incurred after the end of the taxable year, and because A satisfies the other requirements of paragraph (f)(2)(i)(A) of this section, A may take into account a \$2,500,000 retirement plan expense for purposes of determining A's taxable income to be annualized in computing A's first annualized income installment for 2006 ( $\$10,000,000/12 \times 3 = \$2,500,000$ ) unless, pursuant to paragraph (f)(2)(i)(B) of this section, A is able to clearly demonstrate that the retirement plan expense is more appropriately allocable by some other method.

*Example (2).* Same facts as Example 1 except that, consistent with its historical practice, A remits \$9,000,000 to the retirement plan on June 30, 2006, and \$1,000,000 to the retirement plan on September 30, 2006. For purposes of determining A's first and second required installments for 2006, which are based on the income and deductions from the first three months of the taxable year, A may not take into account any of the retirement plan expense because A did not make any payments by March 31, 2006 (and therefore did not satisfy the economic performance requirements of §1.461-4(d)(2)(iii) by March 31, 2006), in accordance with paragraph (f)(1)(iii) of this section. For A's third required installment, which is based on the income and deductions from the first six months of the taxable year, A may take into account a \$9,000,000 retirement plan expense for purposes of determining A's annualized taxable income because A incurred the \$9,000,000 expense by June 30, 2006. For A's fourth required installment, which is based on the income and deductions from the first nine months of the taxable year, A may take into account a \$10,000,000 retirement plan expense for purposes of determining A's annualized taxable income because A incurred the \$10,000,000 retirement plan expense by September 30, 2006.

*Example (3).* Corporation B, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first



required installment. In each of the three preceding taxable years, B has paid annual bonuses on the Friday immediately preceding December 25 to those employees of B that provided services to B during the taxable year and were employed by B on the date such bonuses were paid. At the beginning of 2006, consistent with its historical experience, B's board of directors pass a resolution that B will pay cash bonuses of \$6,000,000 to those employees that have provided services to B during 2006 and are employed by B on December 22, 2006, the Friday immediately preceding December 25, 2006. B plans to pay, and does pay, the cash bonuses to eligible employees on March 1, 2007. The bonuses, pursuant to paragraph (f)(1)(iii) of this section, are not treated as deferred compensation for the taxable year or the annualization period under §1.404(b)-1T because the last day of the annualization period is not to be treated as the last day of B's taxable year. Because the bonuses are not treated as deferred compensation, the bonuses are not subject to section 404, and instead are treated as service liabilities under §1.461-4(d)(2)(i) rather than employee benefit liabilities under §1.461-4(d)(2)(iii). Thus, the bonuses are incurred when all the events have occurred that establish the fact of the liability, the amount of the liability can be determined with reasonable accuracy, and the services are provided to B by B's employees. If B's first required installment is made under the provisions of section 6655(e)(1), the \$6,000,000 is not taken into account for purposes of determining B's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year, because B did not incur any liability for bonus payments for the current taxable year by March 31, 2006, in accordance with paragraph (f)(1)(iii) of this section. However, pursuant to paragraph (f)(2)(i)(A) of this section, because B has historically incurred a bonus expense at the end of the taxable year, and because B satisfies the other requirements of paragraph (f)(2)(i)(A) of this section, B may take into account a \$1,500,000 bonus expense for purposes of determining B's taxable income to be annualized in computing B's first annualized income installment for 2006 ( $\$6,000,000/12 \times 3 = \$1,500,000$ ) unless, pursuant to paragraph (f)(2)(i)(B) of this section, B is able to clearly demonstrate that the bonus expense is more appropriately allocable by some other method.

*Example (4).* Corporation C, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment for its 2006 taxable year. C has a net operating loss carryover to 2006 of \$400,000. C's taxable income from January 1, 2006, through March 31, 2006, without regard to any net operating loss carryover, is \$500,000. For purposes of determining C's first annualized income installment, C's annualized taxable income is \$1,600,000, determined by placing C's first three months of taxable income from January 1, 2006, through March 31, 2006, on an annualized basis ( $\$500,000 \times 12/3 = \$2,000,000$ ) and reducing the resulting amount of \$2,000,000 by the \$400,000 net operating loss carryover to 2006.

*Example (5).* Corporation D, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installment payments for its 2006 taxable year. On April 15, 2005, D filed a Form 3115, "Application for Change in Accounting Method," to request the consent of the Commissioner to change its method of accounting for recognizing revenue. The Commissioner consented to D's requested change, and D signed and mailed the consent letter to the IRS National Office on December 15, 2005. The method change resulted in a positive section 481(a) adjustment of \$200,000 to be taken into account over four taxable years beginning in 2005. D's taxable income from January 1, 2006, through March 31, 2006, prior to any section 481(a) adjustment, is \$500,000. For purposes of determining D's first annualized income installment for its 2006 taxable year, D's annualized taxable income is \$2,050,000, determined by placing the sum of D's first three months of taxable income from January 1, 2006, through March 31, 2006, (\$500,000) plus, pursuant to paragraph (f)(2)(iv) of this section, the portion of the section 481(a) adjustment required to be recognized during the taxable year ( $\$200,000/4 = \$50,000$ ) that is attributable to the period from January 1, 2006, through March 31, 2006, ( $\$50,000 \times 3/12 = \$12,500$ ) on an annualized basis ( $\$512,500 \times 12/3 = \$2,050,000$ ).

*Example (6).* Corporation E, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installment payments for its 2006 taxable year. E's taxable income from January 1, 2006, through March 31, 2006, prior to any section 481(a) adjustment, is \$500,000. On June 30,

2006, E filed a copy of the Form 3115 with the IRS National Office to request a change in method of accounting that was permitted to be made with the automatic consent of the Commissioner and resulted in a negative section 481(a) adjustment of \$400,000 to be taken into account entirely in 2006. For purposes of determining E's first annualized income installment for its 2006 taxable year, E's annualized taxable income is \$2,000,000, determined by placing E's first three months of taxable income from January 1, 2006, through March 31, 2006, (\$500,000) on an annualized basis ( $\$500,000 \times 12/3 = \$2,000,000$ ). Because E did not file the accounting method change request until after the last day of the annualization period, no portion of the section 481(a) adjustment is taken into account in computing E's first annualized income installment.

*Example (7).* Same facts as Example 6 except that E's taxable income from January 1, 2006, through June 30, 2006, prior to any section 481(a) adjustment, is \$800,000. For purposes of determining E's third annualized income installment for its 2006 taxable year, E's annualized taxable income is \$1,200,000, determined by placing the sum of E's first six months of taxable income from January 1, 2006, through June 30, 2006, (\$800,000) less, pursuant to paragraph (f)(2)(iv) of this section, the portion of the 2006 section 481(a) adjustment required to be recognized during the taxable year that is attributable to the period from January 1, 2006, through June 30, 2006 ( $\$400,000 \times 6/12 = \$200,000$ ) on an annualized basis ( $\$600,000 \times 12/6 = \$1,200,000$ ).

*Example (8).* Same facts as Example 7 except that E's request for change in method of accounting required the prior consent of the Commissioner and the Form 3115 was filed with the IRS National Office on June 30, 2006. On December 10, 2006, E received the consent of the Commissioner to change its method of accounting. E signed and mailed the consent letter to the IRS National Office on December 15, 2006. For purposes of determining E's third annualized income installment for its 2006 taxable year, E's annualized taxable income is \$1,600,000, determined by placing E's first six months of taxable income from January 1, 2006, through June 30, 2006, on an annualized basis ( $\$800,000 \times 12/6 = \$1,600,000$ ). No portion of the section 481(a) adjustment is taken into account in computing E's third annualized income installment because, although E filed the accounting method change request on or before the last day of E's third annualization period, E did not receive the Commissioner's consent to change its method of accounting, and E did not sign and mail the consent agreement to the IRS National Office, on or before the last day of E's third annualization period.

*Example (9).* Corporation F, a calendar year taxpayer that began business on January 1, 2003, adopted an accrual method of accounting and will use the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2003 taxable year. As of March 31, 2003, F has purchased and placed in service \$100,000 of "5-year property," as defined in section 168(e), and anticipates purchasing and placing in service another \$100,000 of "5-year property" before December 31, 2003. F does not anticipate being subject to the mid-quarter convention for the 2003 taxable year, does not anticipate making any depreciation elections for this class of property, does not anticipate making a section 179 election, will deduct the 30% additional first year depreciation deduction, does not anticipate any sales or other dispositions of depreciable property, and no events have occurred, and, based on all relevant information available as of the due date of F's first required installment, F does not know of any event that will cause F's taxable year to be a short taxable year. F's annual depreciation expense for 2003 is estimated to be \$88,000 (total depreciation deduction under section 168(k) of \$60,000 ( $\$200,000 \times 30\% = \$60,000$ ) plus annual depreciation of \$28,000 ( $(\$200,000 \text{ minus } \$60,000) \times 20\%$ )). For purposes of determining F's first annualized income installment for its 2003 taxable year, in accordance with paragraph (f)(2)(v)(A) of this section, depreciation expense of \$22,000 ( $\$88,000 \times 3/12 = \$22,000$ ) may be taken into account in computing F's January 1, 2003, through March 31, 2003, taxable income to be annualized. Under paragraph (f)(2)(v)(B) of this section, F may not consider its first annualization period to be a short taxable year for purposes of determining the depreciation allowance for such annualization period.

*Example (10).* Corporation G, a calendar year taxpayer that began business on January 5, 2004, adopted an accrual method of accounting and will use the annualized income installment method

under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2005 taxable year. On January 5, 2004, G purchased and placed in service an asset that cost \$30,000, qualifies as "5-year property" as defined in section 168(e), is eligible for the 50% additional first year depreciation deduction under section 168(k), and is subject to the half-year convention. G will deduct the 50% additional first year depreciation deduction with respect to the "5-year property." For tax year 2004, G takes a depreciation deduction under section 168(k) of \$18,000 (\$15,000 (\$30,000 x 50% = \$15,000) plus annual depreciation of \$3,000 (\$15,000 x 20% = \$3,000)). G does not anticipate being subject to the mid-quarter convention for the 2004 taxable year, does not anticipate making any depreciation elections for this class of property, does not anticipate making a section 179 election, will deduct the 50% additional first year depreciation deduction, does not anticipate any sales or other dispositions of depreciable property, and no events have occurred, and, based on all relevant information available as of the due date of G's first required installment, G does not know of any event that will cause G's taxable year to be a short taxable year. G's annual depreciation expense for 2005 is estimated to be \$4,800 (\$15,000 x 32% = \$4,800). For purposes of determining G's first annualized income installment for its 2005 taxable year, in accordance with paragraph (f)(2)(v)(A) of this section, depreciation expense of \$1,200 (\$4,800 x 3/12 = \$1,200) may be taken into account in computing G's January 1, 2005, through March 31, 2005, taxable income to be annualized. As an alternative to estimating annual depreciation expense based on events that are reasonably expected to occur, depreciation expense of at least \$600 (\$4,800 x 50% x 3/12 = \$600) may be taken into account in computing G's January 1, 2005, through March 31, 2005, taxable income to be annualized. Under paragraph (f)(2)(v)(B) of this section, G may not consider its first annualization period to be a short taxable year for purposes of determining the depreciation allowance for such annualization period.

*Example (11).* Corporation H, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installment payments for its 2006 taxable year. H has owned real property in State Y since 2002 and has used the real property in its trade or business. H's method of accounting for real estate taxes is to deduct the taxes on the lien date, subject to the recurring item exception of §1.461-5. Based on historical practice for the past five years, for the 2006 calendar year State Y imposes a lien for real estate taxes on real property owned in State Y on March 15, 2006, with 90% of the tax due on June 30, 2006, and the remaining 10% of the tax due on June 29, 2007. Based on the value of H's real property in State Y, H's real estate tax liability lien imposed on March 15, 2006, is \$100,000. H pays the first 90% of this liability on June 30, 2006, and the remaining 10% on June 29, 2007. Under paragraph (f)(1)(iii) of this section, the \$100,000 real estate tax liability is not taken into account for purposes of determining H's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year, because economic performance with respect to the real estate tax liability did not occur by March 31, 2006. However, pursuant to paragraph (f)(2)(i)(A) of this section, because H has historically incurred a real estate tax expense after the end of the taxable year and the real estate tax expense was deemed incurred in 2006 pursuant to §1.461-5, and because H satisfies the other requirements of paragraph (f)(2)(i)(A) of this section, a \$2,500 real estate tax expense may be taken into account for purposes of determining H's taxable income to be annualized in computing H's first annualized income installment (\$10,000/12 x 3 = \$2,500) unless, pursuant to paragraph (f)(2)(i)(B) of this section, H is able to clearly demonstrate that the real estate tax expense is more appropriately allocable by some other method.

*Example (12).* Same facts as Example 11, except that H is computing its third required installment payment for H's 2006 taxable year. Pursuant to paragraph (f)(1)(iii) of this section, H may take into account \$90,000 (\$100,000 real estate tax liability x 90% paid on June 30, 2006) for purposes of determining the taxable income to be annualized in computing H's third annualized income installment because economic performance with respect to \$90,000 of the real estate tax liability occurred by June 30, 2006. In addition, pursuant to paragraph (f)(2)(i)(A) of this section, because H has historically incurred a real estate tax expense after the end of the taxable year and the real estate tax expense was deemed incurred in 2006 pursuant to §1.461-5, and because H satisfies the other requirements of paragraph (f)(2)(i)(A) of this section, a \$5,000 real estate tax expense also may be taken into account for purposes of determining H's taxable income to be annualized in computing H's third annualized income installment.

(\$10,000/12 x 6 = \$5,000) unless, pursuant to paragraph (f)(2)(i)(B) of this section, H is able to clearly demonstrate that \$10,000 of the real estate tax expense is more appropriately allocable by some other method. Therefore, pursuant to paragraphs (f)(1)(iii) and (f)(2)(i)(A) of this section, H may take into account \$95,000 of the real estate tax liability for purposes of computing the third required installment payment for H's 2006 taxable year.

*Example (13).* Same facts as Example 11, except that H pays 90% of the real estate tax liability on June 30, 2006, and the remaining 10% of the real estate tax liability on November 30, 2006. Under paragraph (f)(1)(iii) of this section, the \$100,000 real estate tax liability is not taken into account for purposes of determining H's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year, because economic performance with respect to the real estate tax liability did not occur by March 31, 2006. In addition, although H has a history of incurring a real estate tax expense after the end of the taxable year that is deemed incurred during the taxable year, H does not meet the requirements of paragraph (f)(2)(i)(A) of this section in order to take a real estate tax expense into account for purposes of determining H's first annualized income installment because H does not incur a real estate tax at the end of the current taxable year or after the end of the current taxable year that will be deemed incurred during the current taxable year.

*Example (14).* Same facts as Example 13 except that H is computing its third required installment payment for H's 2006 taxable year. Pursuant to paragraph (f)(1)(iii) of this section, H may take into account \$90,000 (\$100,000 real estate tax liability x 90% paid on June 30, 2006) for purposes of determining the taxable income to be annualized in computing H's third annualized income installment because economic performance with respect to \$90,000 of the real estate tax liability occurred by June 30, 2006.

*Example (15).* Corporation I, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installment payments for its 2006 taxable year. As of December 31, 2005, I had a \$1,000,000 account receivable due from Z related to the sale of goods from I to Z during 2005. I has traditionally incurred bad debt expense for worthless accounts receivable and, as of January 1, 2006, I projects that it will have a bad debt expense of \$1,600,000 under section 166 and the regulations for its calendar year 2006. On March 31, 2006, I determined that its receivable from Z was totally worthless under section 166 and the regulations. No other receivables were determined to be worthless between January 1, 2006, and March 31, 2006. In accordance with paragraph (f)(1)(ii) of this section, a \$1,000,000 bad debt write-off is taken into account for purposes of determining the taxable income to be annualized in computing I's first annualized income installment.

*Example (16).* Same facts as Example 15 except that I determines that its receivable from Z was totally worthless under section 166 and the regulations on April 10, 2006. As of March 31, 2006, I had not determined that any receivables were worthless under section 166 and the regulations. In accordance with paragraph (f)(1)(ii) of this section, the \$1,000,000 bad debt expense attributable to the receivable from Z is not taken into account for purposes of determining the taxable income to be annualized in computing I's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year, because the receivable from Z became totally worthless after the last day of I's annualization period. Furthermore, I may not take the bad debt expense into account for purposes of determining the taxable income to be annualized in computing I's first annualized income installment because the receivable from Z does not meet the requirements of paragraph (f)(2)(i) of this section.

*Example (17).* Corporation J, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2006 taxable year. J projects its annualized tax for its 2006 taxable year, based on annualizing J's taxable income for its first annualization period from January 1, 2006, through March 31, 2006, to be \$1,500,000 before reduction for any credits. J has an unused credit for increasing research activities from 2005 of \$500,000 that is carried over to 2006. For purposes of determining J's first annualized income installment, J's annualized tax

for 2006 is \$1,000,000, determined as the tax for the taxable year computed by placing on an annualized basis J's taxable income from its first annualization period from January 1, 2006, through March 31, 2006, (\$1,500,000) reduced by the \$500,000 credit carryover from 2005.

*Example (18).* Corporation K, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2006 taxable year. K projects its annualized tax for its 2006 taxable year, based on annualizing K's taxable income for its first annualization period from January 1, 2006, through March 31, 2006, to be \$2,000,000 before reduction for any credits. K has historically earned a credit for increasing research activities and, for 2006, K estimates that it will earn a credit for increasing research activities under section 41 of \$1,200,000. However, pursuant to paragraph (f)(1)(vi) of this section, if K were to annualize all components involved in computing the current year credit based on K's activity from January 1, 2006, through March 31, 2006, K would generate a credit of \$1,600,000 for 2006. For purposes of determining K's first annualized income installment, K's annualized tax for 2006 is \$400,000, determined as the tax for the 2006 taxable year (\$2,000,000) computed by placing on an annualized basis K's taxable income from its first annualization period January 1, 2006, through March 31, 2006, reduced by a \$1,600,000 current year credit from increasing research activities.

*Example (19).* Same facts as Example 18 except that K does not begin any research activities until April 3, 2006, and will not incur any research expenses described in paragraph (f)(2)(i) of this section. As a result, if K were to annualize all components involved in computing the current year credit based on K's activity from January 1, 2006, through March 31, 2006, K would generate no section 41 research credit for purposes of determining its first annualized income installment. Pursuant to paragraph (f)(1)(vi) of this section, K can not take into account any credit for its first annualization period because K did not incur the credit by the last day of the first annualization period. Accordingly, for purposes of determining K's first annualized income installment, K's annualized tax for its first annualization period January 1, 2006, through March 31, 2006, is \$2,000,000.

*Example (20).* Corporation L, a calendar year taxpayer, uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate its first required installment payment for its 2006 taxable year. L has licensed technology from Corporation M for the past five years. Pursuant to the license agreement, L pays a license fee to M equal to \$.01 for every dollar of gross receipts earned by L. For 2006, L projects gross receipts of \$200,000,000, of which \$100,000,000 is earned by March 31, 2006, and no portion of L's license fee expense is described in paragraph (f)(2)(i) of this section. Pursuant to paragraph (f)(1)(iii) of this section, a license fee expense of \$1,000,000 (\$100,000,000 x \$.01) is incurred by March 31, 2006, and may be taken into account for purposes of determining the taxable income to be annualized in computing L's first annualized income installment.

*Example (21).* Same facts as Example 20 except that L does not earn any gross receipts by March 31, 2006. In accordance with paragraph (f)(1)(iii) of this section, because the license fee expense was not incurred under §1.461-1(a)(2) by the last day of the annualization period, no license fee expense is taken into account for purposes of determining the taxable income to be annualized in computing L's first annualized income installment, which is based on the income and deductions from the first three months of the taxable year.

*Example (22).* Corporation N is a calendar year taxpayer that produces and sells candy bars. N uses an accrual method of accounting and the annualized income installment method under section 6655(e)(2)(A)(i) to calculate all of its required installment payments for its 2007 taxable year. N annually conducts, and will conduct for 2007 and 2008, a contest for its customers whereby N awards, on a quarterly basis, a cash prize of \$100,000, \$200,000, \$300,000, and \$400,000 to the first, second, third, and fourth quarter winners, respectively. Winners are announced on the last day of each calendar quarter and the prize is payable on the last day of the month following the announcement of the winner. N uses the recurring item exception of section 461(h) and the regulations with respect to its liability to the prize winner. On December 31, 2006, N announced its fourth quarter winner and remitted payment of \$400,000 to the

winner on January 31, 2007. Although the contest liability is incurred in accordance with § 1.461-4(g)(4) on January 31, 2007, at the time payment is made to the award winner, N may not take such item into account in computing N's first annualized income installment for 2007 because, pursuant to the recurring item exception, the \$400,000 is deductible in determining N's 2006 taxable income and is not taken into account in determining N's taxable income for 2007, as required pursuant to paragraph (f)(1) of this section. However, because N has historically incurred an annual prize expense of \$400,000 that is described in paragraph (f)(2)(i)(A) of this section, \$100,000 may be taken into account for purposes of determining the taxable income to be annualized in computing N's first annualized income installment for N's 2007 taxable year based on the \$400,000 liability N will incur for the 2007 taxable year when N makes the payment in January of 2008 to the 2007 fourth quarter winner ( $\$400,000/12 \times 3 = \$100,000$ ), unless, pursuant to paragraph (f)(2)(i)(B) of this section, N is able to clearly demonstrate that the annual prize expense is more appropriately allocable by some other method.

**(g) Items that substantially affect taxable income but cannot be determined accurately by the installment due date.**

(1) *In general.* In determining the applicability of the annualization exceptions described in paragraphs (a) and (b) of this section and §1.6655-3, reasonable estimates may be made from existing data for items that substantially affect income if the amount of such items cannot be determined accurately by the installment due date. Examples of these items are the inflation index for taxpayers using the dollar-value LIFO (last-in, first-out) inventory method, intercompany adjustments for taxpayers that file consolidated returns, and the liquidation of a LIFO layer at the installment date that the taxpayer reasonably believes will be replaced at the end of the year.

(2) *Example.* The following example illustrates the rules of this paragraph (g):

*Example.* Corporation X accounts for its inventory using the dollar-value LIFO method of accounting. If, when computing its first annualized income installment, no reliable inflation index exists for the period January 1, 2006, through March 31, 2006, X may interpolate from an available inflation index for the same months in the previous year to calculate its cost of goods sold.

**(h) Events arising after installment due date that were not reasonably foreseeable.**

(1) *In general.* Events arising subsequent to an installment due date that cause the taxpayer's computation of its taxable income for a prior installment period to be understated will not result in a recomputation of its taxable income for the prior installment period. The preceding sentence applies only if, based on all the facts and circumstances as of the due date of an installment payment, it was not reasonably foreseeable that these subsequent events would occur.

(2) *Example.* The following example illustrates the rules of this paragraph (h):

*Example.* Assume that Congress enacts retroactively effective legislation that causes the taxable income for the applicable 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10- or 11-month period to be understated. This event, which occurs after the applicable installment due date and was not reasonably foreseeable at the time the installment payment was made, will not result in a recomputation of a corporation's taxable income for the applicable installment period because such an event was not reasonably foreseeable.

**(i) Effective date.** This section applies to taxable years beginning after the date that is 30 days after the date the final regulations are published in the Federal Register.

CA-IR-184

**Ref: MECO Plant, CIAC & Advances Exhibits (Updates).**

Please update the following exhibits to incorporate actual 2006 values and MECO's current best estimate for 2007, including supporting documentation:

- a. MECO-1101, MECO-1402 & MECO-1403 (Plant Additions).
- b. MECO-1404 & MECO-WP-1404A (Retirements).
- c. MECO-1405 (Property Held for Future Use).
- d. MECO-1406, MECO-WP-1406A through MECO-WP-1406D (CIAC).
- e. MECO-1407, MECO-WP-1407A & MECO-WP-1407B (Customer Advances).

**MECO Response:**

See Attachment 1 for the requested updated exhibits and workpapers with the 2006 recorded costs for Plant Additions, Retirements, CIAC and Customer Advances. MECO's current best estimate for 2007 for Plant Additions, Retirements, CIAC and Customer Advances were not incorporated in these exhibits and workpapers as the information is not presently available and is anticipated to be provided in the June 2007 update.

- a. Please refer to Attachment 1 (pages 1 through 14).
- b. Please refer to Attachment 1 (pages 15 and 16).
- c. MECO-1405 (Property Held for Future Use) was not updated since the 2006 recorded and 2007 estimated values remain unchanged.
- d. Please refer to Attachment 1 (pages 17 through 21).
- e. Please refer to Attachment 1 (pages 22 through 24).

Maui Electric Company, Limited

Estimated and Recorded 2006

PLANT ADDITIONS

(\$ Thousands)

	(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(F)
	<u>2006 Plant Additions Estimated</u>				<u>2006 Plant Additions Recorded</u>				
	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Reference</u>
1	89,434	43	53	89,529	87,727	435	347	88,509	MECO-WP-1401A

Sources

Specific Project Costs (including Straggling Costs): MECO-WP-1401C

Straggling Costs: MECO-WP-1401D

Program Expenditures: MECO-WP-1401E

Totals may not add due to rounding.



Maui Electric Company, Limited  
Capital Projects By Project Number  
Completed In The Year Ending December 31, 2006

					2006			
Project #	Function	Category	Type	Description	Recorded	Maui	Lanai	Molokai
<b>MAJOR CAPITAL PROJECTS (GREATER THAN \$2,500,000)</b>								
1	M3141001	Prod	Steam	MPP M18-18 MW Steam Turbine NI	60,889,911	60,889,911		
				<b>Subtotal - Major Capital Projects</b>	<b>60,889,911</b>	<b>60,889,911</b>	-	-
<b>NON-MAJOR CAPITAL PROJECTS (\$2,500,000 AND BELOW)</b>								
2	M0000012	Trans	Substation	Waiinu Sub 36 Unit Sub/69kv Brkr Addn	2,088,742	2,088,742		
3	M0000019	Dist	Overhead	Damages Caused by External Party	42,341	37,080		5,262
4	M0000029	Trans	Underground	Minor UG Trans Addn	17,696	17,696		
5	M0000041	Dist	Underground	Waihee Village Conv	141,097	141,097		
6	M0000060	Trans	Overhead	SOH H.Piilani Widening (Maalaea)	(75,023)	(75,023)		
7	M0000093	Trans	Substation	Maa/Maa-Waiinu Relay Upgr	243	243		
8	M0000111	Dist	Substation	Peahi Sub 94	-	-		
9	M0000125	General	Comm Eq	MECO MW Spurs	4,156	4,156		
10	M0000126	Trans	Substation	Sub4 Revenue Metering Upgr	8,526	8,526		
11	M0000195	Trans	Substation	KPP #2295-Wailuku Relay Upgrade	6,848	6,848		
12	M0000229	General	Office F&E	Lifecycle Maintenance 02-03	17,741	17,741		
13	M0000300	Dist	Tools & Eq	Replacement Distr. Tools & Equipment	40,251	40,251		
14	M0000314	Dist	Substation	Life Cycle Mgt-Regulators & Controllers	-	-		
15	M0000315	Dist	Substation	Life Cycle Mgt-Reclosures&Controllers	42,639	20,368		22,271
16	M0000316	Dist	Substation	Life Cycle Mgt-Batteries&Chargers	13,819	13,819		
17	M0000317	Dist	Substation	Life Cycle Mgt-Distribution ACBs	-	-		
18	M0000353	ROW	Dist	PMCo Distr Line Esmt	(14,565)	(14,565)		
19	M0000390	Dist	Substation	Palaau Sub Tsf Repl	1,582			1,582
20	M0000391	Dist	Substation	Puunana Sub Tsf Repl	279			279
21	M0000414	Prod	Steam	KPP Improve water supply	23,433	23,433		
22	M0000418	General	Comm Eq	ICS MW Battery Repl	-	-		
23	M0000430	Trans	Overhead	SOH Mokulele Hwy Widen Ph2B	(46,629)	(46,629)		
24	M0000435	Dist	Substation	Waiehu Sub Switchgear Addn	10,890	10,890		
25	M0000461	General	Misc	T&D/Main Offc Bldg Upgrade	23,048	23,048		
26	M0000487	General	Comm Eq	Molokai Phone System Upgrade	(12)			(12)
27	M0000489	Land	Substation	Sub 93 Site Acquisition	32,883	32,883		
28	M0000500	Dist	Underground	Kaanapali Ocean Resort Ph2	32	32		
29	M0000508	Dist	Overhead	Waiehu Kou Subdiv Ph3	25	25		
30	M0000519	Dist	Overhead	COM-H'Poko Well	2,925	2,925		
31	M0000523	Prod	Steam	KPP Upgr Fire System	60,093	60,093		
32	M0000525	Dist	Overhead	SOH H'akala Hwy Widening	189,107	189,107		
33	M0000544	Dist	Underground	Kahului Airport Improv	52,007	52,007		
34	M0000545	Dist	Underground	Airport Indust 3 Offsite Improve	(4,880)	(4,880)		
35	M0000555	Dist	Underground	Lanai Residence Lots	238		238	
36	M0000559	General	Comm Eq	Mobile Radio Trunking	85	85		
37	M0000561	Dist	Underground	Waiko Industrial Subdiv	169,525	169,525		
38	M0000596	General	Comm Eq	ICS-Radio Replacement	373,656	216,344	92,504	64,808
39	M0000597	Prod	Other	M12/M13 Biodiesel Stor & Del Sys	(26)	(26)		
40	M0000601	Trans	Overhead	Sys 23kV Waikapu Reloc	(19,528)	(19,528)		
41	M0000611	Trans	Underground	Kahalani Subd Offsite 23kV	66,442	66,442		
42	M0000612	Dist	Underground	Kahalani Subd Offsite 12kV	240	240		
43	M0000617	Dist	Overhead	Nahiku Subdivision	-	-		
44	M0000626	Prod	Other	M11 Generator Pole Piece Rep	470,935	470,935		
45	M0000630	Dist	Underground	Lahaina Business Park-Ph 2	269,303	269,303		
46	M0000631	Dist	Underground	Hope Chapel	24,726	24,726		
47	M0000632	Dist	Underground	Wailea Beach Villas	25	25		
48	M0000638	Dist	Underground	Kaluako UG Main Fdr Repl Ph 2	1,109			1,109
49	M0000642	Dist	Underground	Alii Village Subd	39	39		
50	M0000645	Trans	Overhead	Holomua-Maliko Gulch 23kV Reloc	4,985	4,985		
51	M0000656	Dist	Underground	COM Pookela Wells Pump	15,944	15,944		
52	M0000657	Dist	Underground	Sand Hills Subd	200,934	200,934		



Maui Electric Company, Limited  
Capital Projects By Project Number  
Completed In The Year Ending December 31, 2006

						2006			
	Project #	Function	Category	Type	Description	Recorded	Maui	Lanai	Molokai
53	M0000668	General	Comm Eq		Hana Mobile Radio Upgrade	-	-		
54	M0000670	General	Misc		Env Bldg Fire Sprinkler	7,142	7,142		
55	M0000671	General	Comm Eq		SCADA Weatherstations	-	-		
56	M0000673	Dist	Underground		Honolua Ridge Sub'd-Ph1	740	740		
57	M0000674	Dist	Underground		Hale Kanani OS	25,834	25,834		
58	M0000675	Dist	Overhead		Kula Ag Park	190,605	190,605		
59	M0000676	Prod	Steam		K3 Static Exciter	12,547	12,547		
60	M0000677	General	Comm Eq		Alternate Dispatch	863,260	863,260		
61	M0000678	General	Comm Eq		Satellite Dispatch Center	3,251	3,251		
62	M0000682	General	Comm Eq		Hana SCADA/Fiber	335,416	335,416		
63	M0000683	Dist	Underground		Lanai Res Lots Subd Ph2A	36		36	
64	M0000685	Trans	Overhead		Baldwin Pk to Holomua	157,760	157,760		
65	M0000690	General	Comm Eq		T&D SCADA Equipment	-	-		
66	M0000695	General	Comm Eq		SCADA Mapboard	25,479	25,479		
67	M0000703	Prod	Steam		K3 Vibration Monitor	9,883	9,883		
68	M0000705	Prod	Other		Lanai EMD Controls Retrofit	27,729		27,729	
69	M0000706	Prod	Other		Lanai Fire Dept Connection	399		399	
70	M0000707	Dist	Overhead		COM Kupa'a Well #1 Offsite	46,358	46,358		
71	M0000712	Dist	Substation		Kihei Sub 35 Replace Tsf 2	519,639	519,639		
72	M0000714	Dist	Substation		Kihei Sub 35 Replace Tsf 1	529,455	529,455		
73	M0000715	Dist	Substation		Kah Sub Tsf 8-3 Replace	612,305	612,305		
74	M0000722	Prod	Other		M14 CEMS Replacement	166,545	166,545		
75	M0000723	Prod	Other		M16 CEMS Replacement	165,451	165,451		
76	M0000726	Prod	Steam		K4 Vibration Monitor	19,551	19,551		
77	M0000730	Trans	Substation		Sub 36 Unit 3 Tsf Addn	966,509	966,509		
78	M0000731	Trans	Overhead		Towne Realty Temp 23kV Relocation	870	870		
79	M0000737	General	Tools & Eq		PPE-1A-Outerwear Rainwear	133	133		
80	M0000739	Dist	Substation		Makila Hydro	17,383	17,383		
81	M0000740	Dist	Overhead		Kahalani Offsite Reloc	44,540	44,540		
82	M0000742	Dist	Underground		Lanikeha Sub'd-PH1	18,529	18,529		
83	M0000743	General	Misc		Aud.Grease Interceptor	34,902	34,902		
84	M0000744	Dist	Underground		Maui R and T Ph 1/Incr 1	24,032	24,032		
85	M0000745	Dist	Overhead		Sys Imp Piihola Farms III	-	-		
86	M0000748	Dist	Overhead		SOH Mokulele Hwy PH1B	126,600	126,600		
87	M0000750	Prod	Steam		KPP UPS Battery Charger	-	-		
88	M0000751	Trans	Substation		Trans.-Radiator MPP M123	-	-		
89	M0000752	Dist	Substation		Dist-Radiator K2 Replace	98,721	98,721		
90	M0000753	General	Tools & Eq		Cable Diagnostic Package Sys	30,285	30,285		
91	M0000754	Dist	Meters		Test Boards & Warm-up Boards	111,730	111,730		
92	M0000755	Trans	Substation		CKT 1398 SEL351 Upgrade	44,856	44,856		
93	M0000756	General	Office F&E		MECO Network LC 2006	39,221	39,221		
94	M0000757	Prod	Steam		K1-4 Synchronizer	36,799	36,799		
95	M0000759	Prod	Steam		#1 Fuel Oil Tank roof	49,426	49,426		
96	M0000760	Dist	Underground		Waikapu Gardens Ph1	100,983	100,983		
97	M0000761	Dist	Underground		Kai Malu @ Wailea	196,893	196,893		
98	M0000762	Prod	Other		GT1 Exhaust	24,317			24,317
99	M0000763	Prod	Other		MGC Borescope	43,724	43,724		
100	M0000764	Dist	Underground		Mahanalua Nui Subdivision-PH4	233,904	233,904		
101	M0000765	Dist	Underground		Kihei Kauhale Subd	35,954	35,954		
102	M0000766	Dist	Underground		Ke Alii Kai II Subdivision	66,046	66,046		
103	M0000768	Dist	Underground		Wailea MF-5 (Wailea Kanani)	113,102	113,102		
104	M0000769	Dist	Underground		Honolua Ridge PH-II	319,196	319,196		
105	M0000770	Dist	Underground		Kamalii Alayna Subd	149,575	149,575		
106	M0000771	Dist	Underground		Kamalii Alayna OS	122,603	122,603		
107	M0000772	Dist	Underground		Maui Hi Perf Computer Ctr	57,032	57,032		
108	M0000776	Prod	Steam		KPP Scaffolds	19,167	19,167		
109	M0000778	Dist	Underground		Westin KOR Villas	64,227	64,227		



Maui Electric Company, Limited  
Capital Projects By Project Number  
Completed In The Year Ending December 31, 2006

						2006			
	Project #	Function	Category	Type	Description	Recorded	Maui	Lanai	Molokai
110	M0000779	Dist	Underground		Waikapu Gardens Ph2	159,821	159,821		
111	M0000780	Dist	Underground		Maui Lani Ph7 Incr2	164,275	164,275		
112	M0000781	Dist	Underground		Peahi Farms Offsite	-	-		
113	M0000814	General	Tools & Eq		Power Factor Tester	39,889	39,889		
114	M0000815	Trans	Substation		Hana DG Parallel Operations	-	-		
115	M0000836	Dist	Substation		2006 48v Bat/Chgr/Rclr Bat	23,179	23,179		
116	M0000837	Dist	Underground		Kehalani Site 22 (Ohia Ph3)	66,663	66,663		
117	M0000838	Dist	Underground		Kapalua Village Ph 1	118,910	118,910		
118	M0000839	Dist	Underground		Kai Makani Condo Offsite	121,023	121,023		
119	M0000840	General	Office F&E		2006 Office Renovation	51,603	51,603		
120	M0000843	Dist	Underground		Maui Lani Elementary School	33,192	33,192		
121	M0000844	Dist	Underground		Kihei Comm HH Reloc	26,281	26,281		
122	M0000845	Dist	Underground		Land Court 960 Subdivision	53,996	53,996		
123	M0000849	Dist	Substation		2006 Reclosers & Relays	65,744	65,744		
124	M0000851	Dist	Underground		Waikapu Gardens Ph3	42,397	42,397		
125	M0000852	Dist	Underground		Kai Makani Condo's Onsite	16,036	16,036		
126	M0000855	Dist	Underground		Keokea Five LLC	44,063	44,063		
127	M0000866	Prod	Other		E-Cell Stacks	84,565	84,565		
128	M0000867	Trans	Substation		KWP 1 Wind Farm	511,322	511,322		
129	M0000868	Dist	Substation		Makila Hydro Interconnection	37,434	37,434		
130	M2600000	Prod	Other		MPP Minor PS Additions	3,592	3,592		
131	M2601000	Prod	Steam		KPP Minor PS Additions	71,963	71,963		
132	M2602000	Prod	Other		LPP Minor PS Addition	39,720		39,720	
133	M2603000	Prod	Other		MOE Minor PS Addition	4,727			4,727
134	M3030000	ROW	Dist		Minor R/W Purchase & Appraisal-Maui	3,867	3,867		
135	M3032000	ROW	Dist		Minor R/W Purchase & Appraisal-Lanai	-		-	
136	M3033000	ROW	Dist		Minor R/W Purchase & Appraisal-Molokai	312			312
137	M3183000	Prod	Other		SCR Demonstration Project	398	398		
138	M3200000	Prod	Other		MPP Minor PP Additions	-	-		
139	M3201000	Prod	Steam		KPP Minor PP Additions	4,722	4,722		
140	M3202000	Prod	Other		LPP Minor PP Additions	-		-	
141	M3203000	Prod	Other		MOE Minor PP Additions	-			-
142	M3300000	Trans	Substation		Transmission Sub Additions	27,409	27,409		
143	M3500000	Trans	Overhead		Minor Transmission Plant Lines	232,363	232,249		114
144	M3543000	Trans	Overhead		Waiale to Sub 36 T&D Ln Reconstruct	(196,816)	(196,816)		
145	M3544000	Trans	Overhead		Kaahumanu T&D Line Reconstruction	(76,150)	(76,150)		
146	M3600000	Dist	Substation		Minor Distribution SS Addition	39,427	39,427		
147	M7000000	Dist	Services	OH	Overhead Services & Extensions	418,962	486,682	16,828	(84,548)
148	M7300000	Dist	Overhead		Minor Pole Line Relocation	18,358	18,358		
149	M7450000	Dist	Overhead		Minor Overhead Feeders & Conversion	-	-		
150	M7750000	Dist	Overhead		Other Overhead additions	1,248,992	843,050	157,855	248,087
151	M7761000	Dist	Overhead		Minor Storm Damage Repairs	4,350	(2,679)		7,030
152	M7900000	Dist	Meters		Meters & Metering Equip. (RB)	860,513	851,574	6,505	2,434
153	M7910000	Dist	Transformers		Transformer & Related Equip (RB)	2,346,525	2,346,525		
154	M7920000	Dist	Overhead		Minor State Hwy Projects	27,392	27,392		
155	M7961000	Dist	Overhead		SOH Honoapiilani Widening Kaa	(314,772)	(314,772)		
156	M7990000	Dist	Street Light		Street Lights	45,561	45,561		
157	M8000000	Dist	Services	UG	Underground Extensions & Services	2,141,228	2,000,447	91,354	49,427
158	M8020000	Dist	Underground		In-Kind CIAC Maui	6,995,788	6,995,788		
159	M8500000	Dist	Underground		Minor OH-UG Conversions	16,982	16,982		
160	M8700000	Dist	Underground		Minor Cable Failure Replace	399,362	399,362		
161	M8900000	Dist	Underground		Other Underground Additions	178,457	174,520		3,938
162	M9000000	General	Comm Eq		Minor Communication Facilities	20,017	20,017		
163	M9058000	General	Comm Eq		Molokai SCADA System	(3,544)			(3,544)
164	M9080000	General	Comm Eq		T&D Radio Equipment	5,263	5,263		
165	M9083000	General	Comm Eq		Mobile Radio Repl	-	-		
166	M9200000	General	Misc		Minor Gen Plant Add	846	846		

Maui Electric Company, Limited  
Capital Projects By Project Number  
Completed In The Year Ending December 31, 2006

						2006			
	Project #	Function	Category	Type	Description	Recorded	Maui	Lanai	Molokai
167	M9410000	General	Tools & Eq		Tools & Equip-T&D	113,423	113,423		
168	M9420000	General	Tools & Eq		Tools & Equip-Production	42,154	42,154		
169	M9660000	General	Office F&E		Office Furn and Equip Accounting	6,646	6,646		
170	M9661000	General	Office F&E		Office Furn and Equip Admin	23,627	23,627		
171	M9662000	General	Office F&E		Office Furn and Equip T&D	4,732	2,933	1,799	
172	M9663000	General	Office F&E		Office Furn and Equip Production	2,698	3,071		(373)
173	M9664000	General	Office F&E		Office Furn and Equip Engineering	6,331	6,331		
174	M9665000	General	Office F&E		Office Furn and Equip Customer Service	4,363	4,363		
175	M9666000	General	Office F&E		Office Furn and Equip CORP	6,441	6,441		
176	M9800000	Veh	Vehicles		Vehicle Purchases	14,239	14,239		
177	WSchimizu12	Dist	Overhead		Waiohuli Hikina Subdivision	-	-		
178	WSchimizu14	Dist	Overhead		System Improvements Kapalua Village Ph	-	-		
					<b>Subtotal - Non-Major Capital Projects</b>	<b>27,619,428</b>	<b>26,837,242</b>	<b>434,967</b>	<b>347,219</b>
					<b>GRAND TOTAL PLANT ADDITIONS</b>	<b>88,509,340</b>	<b>87,727,154</b>	<b>434,967</b>	<b>347,219</b>



Maui Electric Company, Limited

Estimated and Recorded Specific Project Costs By Project Number  
For the Year Ending December 31, 2006

						A	B
						2006	2006
	Project #	Function	Category	Type	Description	Estimated	Recorded
1	M0000012	Trans	Substation		Waiinu Sub 36 Unit Sub/69kv Brkr Addn	2,032,671	2,088,742
2	M0000041	Dist	Underground		Waihee Village Conv	141,097	141,097
3	M0000060	Trans	Overhead		SOH H.Piilani Widening (Maalaea)		(75,023)
4	M0000093	Trans	Substation		Maa/Maa-Waiinu Relay Upgr		243
5	M0000111	Dist	Substation		Peahi Sub 94	510,959	-
6	M0000125	General	Comm Eq		MECO MW Spurs	4,156	4,156
7	M0000126	Trans	Substation		Sub4 Revenue Metering Upgr		8,526
8	M0000195	Trans	Substation		KPP #2295-Wailuku Relay Upgrade	6,848	6,848
9	M0000353	ROW	Dist		PMCo Distr Line Esmt	(14,565)	(14,565)
10	M0000390	Dist	Substation		Palaau Sub Tsf Repl	1,582	1,582
11	M0000391	Dist	Substation		Puunana Sub Tsf Repl	279	279
12	M0000414	Prod	Steam		KPP Improve water supply	11,000	23,433
13	M0000418	General	Comm Eq		ICS MW Battery Repl	25,008	-
14	M0000430	Trans	Overhead		SOH Mokulele Hwy Widen Ph2B	(5,355)	(46,629)
15	M0000435	Dist	Substation		Waiehu Sub Switchgear Addn	7,656	10,890
16	M0000487	General	Comm Eq		Molokai Phone System Upgrade	(12)	(12)
17	M0000489	Land	Substation		Sub 93 Site Acquisition	32,883	32,883
18	M0000500	Dist	Underground		Kaanapali Ocean Resort Ph2	32	32
	M0000508	Dist	Overhead		Waiehu Kou Subdiv Ph3		25
19	M0000519	Dist	Overhead		COM-H'Poko Well	10,691	2,925
20	M0000523	Prod	Steam		KPP Upgr Fire System	49,473	60,093
21	M0000525	Dist	Overhead		SOH H'akala Hwy Widening	184,808	189,107
22	M0000544	Dist	Underground		Kahului Airport Improv	36,947	52,007
23	M0000545	Dist	Underground		Airport Indust 3 Offsite Improve	1,765	(4,880)
24	M0000555	Dist	Underground		Lanai Residence Lots	238	238
25	M0000559	General	Comm Eq		Mobile Raio Trunking	-	85
26	M0000561	Dist	Underground		Waiko Industrial Subdiv	118,095	169,525
27	M0000596	General	Comm Eq		ICS-Radio Replacement	382,950	373,656
28	M0000597	Prod	Other		M12/M13 Biodiesel Stor & Del Sys	(26)	(26)
29	M0000601	Trans	Overhead		Sys 23kV Waikapu Reloc		(19,528)
30	M0000611	Trans	Underground		Kahalani Subd Offsite 23kV	122,833	66,442
31	M0000612	Dist	Underground		Kahalani Subd Offsite 12kV	240	240
32	M0000617	Dist	Overhead		Nahiku Subdivision	95,696	-
33	M0000626	Prod	Other		M11 Generator Pole Piece Rep	392,183	470,935
34	M0000630	Dist	Underground		Lahaina Business Park-Ph 2	152,276	269,303
35	M0000631	Dist	Underground		Hope Chapel	24,698	24,726
36	M0000632	Dist	Underground		Wailea Beach Villas		25
37	M0000638	Dist	Underground		Kaluako UG Main Fdr Repl Ph 2	1,109	1,109
38	M0000642	Dist	Underground		Alii Village Subd		39
39	M0000645	Trans	Overhead		Holomua-Maliko Gulch 23kV Reloc	5,204	4,985
40	M0000656	Dist	Underground		COM Pookela Wells Pump	14,453	15,944
41	M0000657	Dist	Underground		Sand Hills Subd	200,934	200,934
42	M0000668	General	Comm Eq		Hana Mobile Radio Upgrade	52,017	-
43	M0000670	General	Misc		Env Bldg Fire Sprinkler	7,142	7,142
44	M0000671	General	Comm Eq		SCADA Weatherstations	2,544	-
45	M0000673	Dist	Underground		Honolua Ridge Sub'd-Ph1	473	740
46	M0000674	Dist	Underground		Hale Kanani OS	25,834	25,834
47	M0000675	Dist	Overhead		Kula Ag Park	190,605	190,605



Maui Electric Company, Limited

Estimated and Recorded Specific Project Costs By Project Number

For the Year Ending December 31, 2006

						A	B
						2006	2006
	Project #	Function	Category	Type	Description	Estimated	Recorded
48	M0000676	Prod	Steam		K3 Static Exciter	12,547	12,547
49	M0000677	General	Comm Eq		Alternate Dispatch	840,346	863,260
50	M0000678	General	Comm Eq		Satellite Dispatch Center	3,251	3,251
51	M0000682	General	Comm Eq		Hana SCADA/Fiber	322,630	335,416
52	M0000683	Dist	Underground		Lanai Res Lots Subd Ph2A	36	36
53	M0000685	Trans	Overhead		Baldwin Pk to Holomua	154,770	157,760
54	M0000695	General	Comm Eq		SCADA Mapboard	16,942	25,479
55	M0000703	Prod	Steam		K3 Vibration Monitor	9,883	9,883
56	M0000705	Prod	Other		Lanai EMD Controls Retrofit	26,508	27,729
57	M0000706	Prod	Other		Lanai Fire Dept Connection	399	399
58	M0000707	Dist	Overhead		COM Kupa'a Well #1 Offsite	46,358	46,358
59	M0000712	Dist	Substation		Kihei Sub 35 Replace Tsf 2	516,322	519,639
60	M0000714	Dist	Substation		Kihei Sub 35 Replace Tsf 1	513,306	529,455
61	M0000715	Dist	Substation		Kah Sub Tsf 8-3 Replace	638,473	612,305
62	M0000722	Prod	Other		M14 CEMS Replacement	206,945	166,545
63	M0000723	Prod	Other		M16 CEMS Replacement	245,311	165,451
64	M0000726	Prod	Steam		K4 Vibration Monitor	18,833	19,551
65	M0000730	Trans	Substation		Sub 36 Unit 3 Tsf Addn	1,065,258	966,509
66	M0000731	Trans	Overhead		Towne Realty Temp 23kV Relocation		870
67	M0000737	General	Tools & Eq		PPE-1A-Outerwear Rainwear	133	133
68	M0000739	Dist	Substation		Makila Hydro	13,286	17,383
69	M0000740	Dist	Overhead		Kehalani Offsite Reloc	44,540	44,540
70	M0000742	Dist	Underground		Lanikeha Sub'd-PH1	201,290	18,529
71	M0000743	General	Misc		Aud.Grease Interceptor	53,373	34,902
72	M0000744	Dist	Underground		Maui R and T Ph 1/Incr 1	24,032	24,032
73	M0000745	Dist	Overhead		Sys Imp Piihola Farms III	10,415	-
74	M0000748	Dist	Overhead		SOH Mokulele Hwy PH1B	100,222	126,600
75	M0000750	Prod	Steam		KPP UPS Battery Charger	21,626	-
76	M0000751	Trans	Substation		Trans.-Radiator MPP M123	89,511	-
77	M0000752	Dist	Substation		Dist-Radiator K2 Replace	98,343	98,721
78	M0000753	General	Tools & Eq		Cable Diagnostic Package Sys	41,005	30,285
79	M0000754	Dist	Meters		Test Boards & Warm-up Boards	108,026	111,730
80	M0000755	Trans	Substation		CKT 1398 SEL351 Upgrade	79,278	44,856
81	M0000756	General	Office F&E		MECO Network LC 2006	43,503	39,221
82	M0000757	Prod	Steam		K1-4 Synchronizer	37,810	36,799
83	M0000759	Prod	Steam		#1 Fuel Oil Tank roof	50,217	49,426
84	M0000760	Dist	Underground		Waikapu Gardens Ph1	100,983	100,983
85	M0000761	Dist	Underground		Kai Malu @ Wailea		196,893
86	M0000762	Prod	Other		GT1 Exhaust	25,466	24,317
87	M0000763	Prod	Other		MGC Borescope	43,724	43,724
88	M0000764	Dist	Underground		Mahanalua Nui Subdivision-PH4	168,396	233,904
89	M0000765	Dist	Underground		Kihei Kauhale Subd	36,609	35,954
90	M0000766	Dist	Underground		Ke Alii Kai II Subdivision	87,448	66,046
91	M0000768	Dist	Underground		Wailea MF-5 (Wailea Kanani)	121,130	113,102
92	M0000769	Dist	Underground		Honolua Ridge PH-II	236,098	319,196
93	M0000770	Dist	Underground		Kamali'i Alayna Subd		149,575
94	M0000771	Dist	Underground		Kamali'i Alayna OS	55,088	122,603
95	M0000772	Dist	Underground		Maui Hi Perf Computer Ctr	58,810	57,032

Maui Electric Company, Limited

Estimated and Recorded Specific Project Costs By Project Number  
For the Year Ending December 31, 2006

						A	B
						2006	2006
	Project #	Function	Category	Type	Description	Estimated	Recorded
96	M0000776	Prod	Steam		KPP Scaffolds	18,704	19,167
97	M0000778	Dist	Underground		Westin KOR Villas	34,432	64,227
98	M0000779	Dist	Underground		Waikapu Gardens Ph2	146,610	159,821
99	M0000780	Dist	Underground		Maui Lani Ph7 Incr2	37,541	164,275
100	M0000781	Dist	Underground		Peahi Farms Offsite	408,876	-
101	M0000814	General	Tools & Eq		Power Factor Tester		39,889
102	M0000815	Trans	Substation		Hana DG Parallel Operations	248,974	-
103	M0000836	Dist	Substation		2006 48v Bat/Chgr/Rclr Bat		23,179
104	M0000837	Dist	Underground		Kahalani Site 22 (Ohia Ph3)		66,663
105	M0000838	Dist	Underground		Kapalua Village Ph 1	45,941	118,910
106	M0000839	Dist	Underground		Kai Makani Condo Offsite		121,023
107	M0000840	General	Office F&E		2006 Office Renovation	31,929	51,603
108	M0000843	Dist	Underground		Maui Lani Elementary School		33,192
109	M0000844	Dist	Underground		Kihei Comm HH Reloc		26,281
110	M0000845	Dist	Underground		Land Court 960 Subdivision		53,996
111	M0000849	Dist	Substation		2006 Reclosers & Relays		65,744
112	M0000851	Dist	Underground		Waikapu Gardens Ph3		42,397
113	M0000852	Dist	Underground		Kai Makani Condo's Onsite		16,036
114	M0000855	Dist	Underground		Keokea Five LLC		44,063
115	M0000866	Prod	Other		E-Cell Stacks		84,565
116	M0000867	Trans	Substation		KWP 1 Wind Farm		511,322
117	M0000868	Dist	Substation		Makila Hydro Interconnection		37,434
118	M3141001	Prod	Steam		MPP M18-18 MW Steam Turbine NI	61,724,954	60,889,911
119	M3183000	Prod	Other		SCR Demonstration Project	222	398
120	M3543000	Trans	Overhead		Waiale to Sub 36 T&D Ln Reconstruct		(196,816)
121	M3544000	Trans	Overhead		Kaahumanu T&D Line Reconstruction	(76,150)	(76,150)
122	M7961000	Dist	Overhead		SOH Honoapiilani Widening Kaa		(314,772)
123	M8020000	Dist	Underground		In-Kind CIAC Maui	6,769,644	6,995,788
124	M9058000	General	Comm Eq		Molokai SCADA System	(3,544)	(3,544)
125	WShimizu12	Dist	Overhead		Waiohuli Hikina Subdivision	101,705	-
126	WShimizu14	Dist	Overhead		System Improvements Kapalua Village Ph1	28,176	-
127						80,933,917	79,926,240

						CA-IR-184 DOCKET NO. 2006-0387 ATTACHMENT 1 PAGE 9 OF 24	
						MECO-WP-1401D DOCKET NO. 2006-0387 PAGE 1 OF 2 Updated 6/8/07	
Maui Electric Company, Limited							
Estimated and Recorded Straggling Costs By Project Number							
For the Year Ending December 31, 2006							
						A	B
						2006	2006
	<u>Project #</u>	<u>Function</u>	<u>Category</u>	<u>Type</u>	<u>Description</u>	<u>Estimated</u>	<u>Recorded</u>
1	M0000012	Trans	Substation		Waiinu Sub 36 Unit Sub/69kv Brkr Addn	80,120	136,191
2	M0000041	Dist	Underground		Waihee Village Conv		(2,848)
3	M0000060	Trans	Overhead		SOH H.Piilani Widening (Maalaea)		(75,023)
4	M0000093	Trans	Substation		Maa/Maa-Waiinu Relay Upgr		243
5	M0000125	General	Comm Eq		MECO MW Spurs	4,156	4,156
6	M0000126	Trans	Substation		Sub4 Revenue Metering Upgr		8,526
7	M0000195	Trans	Substation		KPP #2295-Wailuku Relay Upgrade	6,848	6,848
8	M0000353	ROW	Dist		PMCo Distr Line Esmt	(14,565)	(14,565)
9	M0000390	Dist	Substation		Palaau Sub Tsf Repl	1,582	1,582
10	M0000391	Dist	Substation		Puunana Sub Tsf Repl	279	279
11	M0000414	Prod	Steam		KPP Improve water supply	11,000	23,433
12	M0000430	Trans	Overhead		SOH Mokulele Hwy Widen Ph2B	(5,355)	(46,629)
13	M0000435	Dist	Substation		Waiehu Sub Switchgear Addn	7,656	10,890
14	M0000487	General	Comm Eq		Molokai Phone System Upgrade	(12)	(12)
15	M0000489	Land	Substation		Sub 93 Site Acquisition		204
16	M0000500	Dist	Underground		Kaanapali Ocean Resort Ph2	32	32
17	M0000519	Dist	Overhead		COM-H'Poko Well		2,925
18	M0000523	Prod	Steam		KPP Upgr Fire System	49,473	60,093
19	M0000525	Dist	Overhead		SOH H'akala Hwy Widening	23,588	215
20	M0000544	Dist	Underground		Kahului Airport Improv		6,098
21	M0000545	Dist	Underground		Airport Indust 3 Offsite Improve	1,765	(4,880)
22	M0000555	Dist	Underground		Lanai Residence Lots	238	238
23	M0000596	General	Comm Eq		ICS-Radio Replacement		(9,294)
24	M0000597	Prod	Other		M12/M13 Biodiesel Stor & Del Sys	(26)	(26)
25	M0000601	Trans	Overhead		Sys 23kV Waikapu Reloc		(19,528)
26	M0000611	Trans	Underground		Kahalani Subd Offsite 23kV		24
27	M0000612	Dist	Underground		Kahalani Subd Offsite 12kV		6
28	M0000626	Prod	Other		M11 Generator Pole Piece Rep	10,601	89,353
29	M0000632	Dist	Underground		Wailea Beach Villas		25
30	M0000638	Dist	Underground		Kaluako UG Main Fdr Repl Ph 2	1,109	1,109
31	M0000642	Dist	Underground		Alii Village Subd		39
32	M0000657	Dist	Underground		Sand Hills Subd	10,094	10,094
33	M0000670	General	Misc		Env Bldg Fire Sprinkler	7,142	7,142
34	M0000671	General	Comm Eq		SCADA Weatherstations	2,544	-
35	M0000673	Dist	Underground		Honolua Ridge Sub'd-Ph1	473	740
36	M0000674	Dist	Underground		Hale Kanani OS	25,834	25,834
37	M0000676	Prod	Steam		K3 Static Exciter	12,547	12,547
38	M0000677	General	Comm Eq		Alternate Dispatch		22,914
39	M0000678	General	Comm Eq		Satellite Dispatch Center	3,251	3,251
40	M0000683	Dist	Underground		Lanai Res Lots Subd Ph2A	36	36
41	M0000685	Trans	Overhead		Baldwin Pk to Holomua		447
42	M0000695	General	Comm Eq		SCADA Mapboard	16,942	25,479



Maui Electric Company, Limited

Estimated and Recorded Straggling Costs By Project Number

For the Year Ending December 31, 2006

						A	B
						2006	2006
	Project #	Function	Category	Type	Description	Estimated	Recorded
43	M0000703	Prod	Steam		K3 Vibration Monitor	9,883	9,883
44	M0000705	Prod	Other		Lanai EMD Controls Retrofit		27,729
45	M0000706	Prod	Other		Lanai Fire Dept Connection	399	399
46	M0000707	Dist	Overhead		COM Kupa'a Well #1 Offsite	46,358	46,358
47	M0000712	Dist	Substation		Kihei Sub 35 Replace Tsf 2		460,600
48	M0000714	Dist	Substation		Kihei Sub 35 Replace Tsf 1	26,680	5,588
49	M0000715	Dist	Substation		Kah Sub Tsf 8-3 Replace		10,718
50	M0000722	Prod	Other		M14 CEMS Replacement		42,599
51	M0000723	Prod	Other		M16 CEMS Replacement		42,538
52	M0000726	Prod	Steam		K4 Vibration Monitor		718
53	M0000730	Trans	Substation		Sub 36 Unit 3 Tsf Addn	19,978	-
54	M0000731	Trans	Overhead		Towne Realty Temp 23kV Relocation		870
55	M0000737	General	Tools & Eq		PPE-1A-Outerwear Rainwear	133	133
56	M0000740	Dist	Overhead		Kehalani Offsite Reloc		(140)
57	M0000743	General	Misc		Aud.Grease Interceptor		30,239
58	M0000744	Dist	Underground		Maui R and T Ph 1/Incr 1		13
59	M0000753	General	Tools & Eq		Cable Diagnostic Package Sys		(10,720)
60	M0000754	Dist	Meters		Test Boards & Warm-up Boards		3,705
61	M0000755	Trans	Substation		CKT 1398 SEL351 Upgrade	38,318	3,896
62	M0000757	Prod	Steam		K1-4 Synchronizer		233
63	M0000759	Prod	Steam		#1 Fuel Oil Tank roof		3
64	M0000764	Dist	Underground		Mahanalua Nui Subdivision-PH4		(1,382)
65	M0000765	Dist	Underground		Kihei Kauhale Subd		106
66	M0000766	Dist	Underground		Ke Alii Kai II Subdivision		38,744
67	M0000771	Dist	Underground		Kamali'i Alayna OS	2,803	-
68	M0000779	Dist	Underground		Waikapu Gardens Ph2		(7)
69	M0000838	Dist	Underground		Kapalua Village Ph 1		(7)
70	M0000839	Dist	Underground		Kai Makani Condo Offsite		34,919
71	M0000849	Dist	Substation		2006 Reclosers & Relays		65,744
72	M0000851	Dist	Underground		Waikapu Gardens Ph3		2,941
73	M3141001	Prod	Steam		MPP M18-18 MW Steam Turbine NI	694,602	4,151,072
74	M3183000	Prod	Other		SCR Demonstration Project	222	398
75	M3543000	Trans	Overhead		Waiale to Sub 36 T&D Ln Reconstruct		(196,816)
76	M3544000	Trans	Overhead		Kaahumanu T&D Line Reconstruction	(76,150)	(76,150)
77	M7961000	Dist	Overhead		SOH Honoapiilani Widening Kaa		(314,772)
78	M9058000	General	Comm Eq		Molokai SCADA System	(3,544)	(3,544)
79					Total Estimated Straggling Costs	1,017,034	4,664,793

Maui Electric Company, Limited  
Program Expenditures By Project Number  
Completed In The Year Ending December 31, 2006

						2006 Estimated	2006 Recorded
<u>Project #</u>	<u>Function</u>	<u>Category</u>	<u>Type</u>	<u>Description</u>			
<b>PROGRAM PROJECTS</b>							
1	M0000019	Dist	Overhead	Damages Caused by External Party	71,108	42,341	
2	M0000029	Trans	Underground	Minor UG Trans Addn	17,696	17,696	
3	M0000229	General	Office F&E	Lifecycle Maintenance 02-03	14,876	17,741	
4	M0000300	Dist	Tools & Eq	Replacement Distr. Tools & Equipment	39,267	40,251	
5	M0000314	Dist	Substation	Life Cycle Mgt-Regulators & Controllers	35,965	-	
6	M0000315	Dist	Substation	Life Cycle Mgt-Reclosures&Controllers	20,439	42,639	
7	M0000316	Dist	Substation	Life Cycle Mgt-Batteries&Chargers	28,393	13,819	
8	M0000317	Dist	Substation	Life Cycle Mgt-Distribution ACBs_	6,553	-	
9	M0000461	General	Misc	T&D/Main Offc Bldg Upgrade	52,951	23,048	
10	M0000690	General	Comm Eq	T&D SCADA Equipment	34,378	-	
11	M2600000	Prod	Other	MPP Minor PS Additions	3,648	3,592	
12	M2601000	Prod	Steam	KPP Minor PS Additions	58,827	71,963	
13	M2602000	Prod	Other	LPP Minor PS Addition	1,914	39,720	
14	M2603000	Prod	Other	MOE Minor PS Addition	13,029	4,727	
15	M3030000	ROW	Dist	Minor R/W Purchase & Appraisal-Maui	9,881	3,867	
16	M3032000	ROW	Dist	Minor R/W Purchase & Appraisal-Lanai	306	-	
17	M3033000	ROW	Dist	Minor R/W Purchase & Appraisal-Molokai	1,356	312	
18	M3200000	Prod	Other	MPP Minor PP Additions	21,555	-	
19	M3201000	Prod	Steam	KPP Minor PP Additions	22,957	4,722	
20	M3202000	Prod	Other	LPP Minor PP Additions	13,291	-	
21	M3203000	Prod	Other	MOE Minor PP Additions	13,291	-	
22	M3300000	Trans	Substation	Transmission Sub Additions	46,603	27,409	
23	M3500000	Trans	Overhead	Minor Transmission Plant Lines	425,219	232,363	
24	M3600000	Dist	Substation	Minor Distribution SS Addition	55,900	39,427	
25	M7000000	Dist	Services	Overhead Services & Extensions	461,819	418,962	
26	M7300000	Dist	Overhead	Minor Pole Line Relocation	82,441	18,358	
27	M7450000	Dist	Overhead	Minor Overhead Feeders & Conversion	11,209	-	
28	M7750000	Dist	Overhead	Other Overhead additions	1,281,238	1,248,992	
29	M7761000	Dist	Overhead	Minor Storm Damage Repairs		4,350	
30	M7900000	Dist	Meters	Meters & Metering Equip. (RB)	796,719	860,513	
31	M7910000	Dist	Transformers	Transformer & Related Equip (RB)	1,736,805	2,346,525	
32	M7920000	Dist	Overhead	Minor State Hwy Projects	77,462	27,392	
33	M7990000	Dist	Street Light	Street Lights	59,895	45,561	
34	M8000000	Dist	Services	Underground Extensions & Services	2,193,688	2,141,228	
35	M8500000	Dist	Underground	Minor OH-UG Conversions	36,570	16,982	
36	M8700000	Dist	Underground	Minor Cable Failure Replace	234,618	399,362	
37	M8900000	Dist	Underground	Other Underground Additions	267,731	178,457	
38	M9000000	General	Comm Eq	Minor Communication Facilities	21,326	20,017	
39	M9080000	General	Comm Eq	T&D Radio Equipment	14,212	5,263	
40	M9083000	General	Comm Eq	Mobile Radio Repl	13,959	-	
41	M9200000	General	Misc	Minor Gen Plant Add	49,509	846	

Maui Electric Company, Limited							
Program Expenditures By Project Number							
Completed In The Year Ending December 31, 2006							
						2006	2006
	Project #	Function	Category	Type	Description	Estimated	Recorded
42	M9410000	General	Tools & Eq		Tools & Equip-T&D	109,423	113,423
43	M9420000	General	Tools & Eq		Tools & Equip-Production	37,914	42,154
44	M9660000	General	Office F&E		Office Furn and Equip Accounting	8,890	6,646
45	M9661000	General	Office F&E		Office Furn and Equip Admin	20,099	23,627
46	M9662000	General	Office F&E		Office Furn and Equip T&D	2,129	4,732
47	M9663000	General	Office F&E		Office Furn and Equip Production	25,291	2,698
48	M9664000	General	Office F&E		Office Furn and Equip Engineering	12,748	6,331
49	M9665000	General	Office F&E		Office Furn and Equip Customer Service	9,916	4,363
50	M9666000	General	Office F&E		Office Furn and Equip CORP	5,623	6,441
51	M9800000	Veh	Vehicles		Vehicle Purchases	14,239	14,239
52					Total	8,594,876	8,583,100

Maui Electric Company, Limited

2001 - 2006

PLANT ADDITIONS

(\$ Thousands)

	(A) <u>Year</u>	(B) <u>Recorded</u>	(C) <u>Budget</u>	(D) <u>\$ Difference</u>	(E) <u>% Difference</u>
1	2001	22,513	28,140	-5,627	-20%
2	2002	22,442	16,336	6,106	37%
3	2003	35,969	24,352	11,617	48%
4	2004	26,224	22,732	3,493	15%
5	2005	24,398	21,009	3,389	16%
7	2001-2005	<u>131,546</u>	<u>112,569</u>	<u>18,978</u>	<u>17%</u>
6	2006	88,509	84,355	4,154	5%

Totals may not add due to rounding.

Maui Electric Company, Limited

Estimated and Recorded 2006

SPECIFIC PROJECTS OVER \$1,000,000 AND LESS THAN \$2,500,000  
ADDED TO PLANT

(\$ Thousands)

(A)	(B)	(C) <u>2006</u> <u>Estimated</u> <u>Plant</u> <u>Additions</u>	<u>2006</u> <u>Recorded</u> <u>Plant</u> <u>Additions</u>	(D)
<u>Project No.</u>	<u>Project Description</u>			<u>Reference</u>
1 M0000012	Waiinu Sub 36 Unit Substation/ 69 kV Breaker Addition	2,033	2,089	MECO-WP-1401A
2 M0000730	Substation 36 Unit 3 Transformer Addition	1,065	967	MECO-WP-1401A

Maui Electric Company, Limited

Estimated and Recorded 2006

PLANT RETIREMENTS

(\$ Thousands)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	<u>Maui</u>	<u>2006 Estimated</u> <u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>2006 Recorded</u> <u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Reference</u>
1 Production Plant	22	-	-	22	-			-	MECO-WP-1404A
2 Transmission Plant	72	-	-	72	45		0	45	MECO-WP-1404A
3 Distribution	493	6	7	506	499	0		499	MECO-WP-1404A
4 General Plant	436	-	4	440	16			16	MECO-WP-1404A
5 Total	<u>1,022</u>	<u>6</u>	<u>11</u>	<u>1,040</u>	<u>559</u>	<u>0</u>	<u>0</u>	<u>559</u>	MECO-WP-1404A

Note: General Plant Include Vehicles

Maui Electric Company, Limited  
Historical Plant Retirements  
For Years Ended December 31, 2001 - 2006

	A	B	C	D	E	F	G	H	I
Functional Group	2001	2002	2003	2004	2005	Total	Average	2006 Recorded	
<b>MAUI</b>									
1 Production	619	1,588	107,162	-	966	110,335	22,067	-	
2 Transmission	7,322	-	106,756	237,374	6,247	357,698	71,540	44,881	
3 Distribution	732,774	116,618	606,968	733,020	274,807	2,464,187	492,837	498,622	
4 General	114,520	209,714	92,178	136,678	74,934	628,024	125,605	15,592	
5 Vehicles	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	
6 Total	<u>855,234</u>	<u>327,920</u>	<u>913,063</u>	<u>1,107,072</u>	<u>356,954</u>	<u>3,560,244</u>	<u>712,049</u>	<u>559,095</u>	

Functional Group	2001	2002	2003	2004	2005	Total	Average	2006 Recorded	
<b>LANAI</b>									
7 Production	-	-	-	-	-	-	-	-	
8 Transmission	-	-	-	-	-	-	-	-	
9 Distribution	25,292	-	-	4,582	1,027	30,901	6,180	38	
10 General	-	-	-	-	-	-	-	-	
11 Vehicles	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	
12 Total	<u>25,292</u>	<u>-</u>	<u>-</u>	<u>4,582</u>	<u>1,027</u>	<u>30,901</u>	<u>6,180</u>	<u>38</u>	

Functional Group	2001	2002	2003	2004	2005	Total	Average	2006 Recorded	
<b>MOLOKAI</b>									
13 Production	-	-	-	-	-	-	-	-	
14 Transmission	-	-	-	-	-	-	-	182	
15 Distribution	450	-	624	33,631	834	35,539	7,108	-	
16 General	-	-	14,535	5,067	-	19,602	3,920	-	
17 Vehicles	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	
18 Total	<u>450</u>	<u>-</u>	<u>15,159</u>	<u>38,698</u>	<u>834</u>	<u>55,141</u>	<u>11,028</u>	<u>182</u>	

Functional Group	2001	2002	2003	2004	2005	Total	Average	2006 Recorded	
<b>TOTAL MECO</b>									
19 Production	619	1,588	107,162	-	966	110,335	22,067	-	
20 Transmission	7,322	-	106,756	237,374	6,247	357,698	71,540	45,063	
21 Distribution	758,515	116,618	607,592	771,233	276,668	2,530,627	506,125	498,660	
22 General	114,520	209,714	106,713	141,745	74,934	647,626	129,525	15,592	
23 Vehicles	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	
24 Total	<u>880,976</u>	<u>327,920</u>	<u>928,222</u>	<u>1,150,352</u>	<u>358,815</u>	<u>3,646,285</u>	<u>729,257</u>	<u>559,315</u>	

	Estimated	\$ Amt	Forecast Year	Actual 2006
2006 Vehicle Retirements	310,267	1,039,524	2006	-

Note 1

Vehicle retirement were determined separately based on the actual cost of vehicle designated for retirement.

Maui Electric Company, Limited  
Estimated and Recorded 2006  
CONTRIBUTIONS IN AID OF CONSTRUCTION  
(\$ Thousands)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	2006 Estimated				2006 Recorded				Reference
	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	
1 Receipts	2,856	37	20	2,913	3,421	63	1	3,485	MECO-WP-1406A
2 Transfers from Customer Advances	119	51	592	762	344	39	492	875	MECO-WP-1406B
3 Net Cash CIAC	<u>2,975</u>	<u>88</u>	<u>612</u>	<u>3,675</u>	<u>3,765</u>	<u>102</u>	<u>493</u>	<u>4,360</u>	MECO-WP-1406C
4 In-Kind	6,769	-	-	6,769	6,996	-	-	6,996	MECO-WP-1406D



Maui Electric Company, Limited  
Estimated and Recorded Cash CIAC Receipts  
For the Year Ending December 31, 2006

(In Thousands)

<u>2006 Estimated</u>					<u>2006 Recorded</u>			
	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>
1	2,856	37	20	2,913	3,421	63	1	3,485

Note: Figures may not total exactly due to rounding

Maui Electric Company, Limited  
Estimated and Recorded Customer Advance Transfers to CIAC  
For the Year Ending 12/31/06

(\$ Thousands)

1	2006 Estimated				2006 Recorded			
	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>
	119	51	592	762	344	39	492	875

Maui Electric Company, Limited  
Estimated and Recorded Cash Contributions-in-Aid of Construction (CIAC)  
For the Year Ending December 31, 2006

(In Thousands)

	A	B	C	D	E	F	G	H	I
	Actual CIAC Received							Estimated	Recorded
Division	2001	2002	2003	2004	2005	Total	5-Yr Avg	2006	2006
1 Maui	2,131	1,452	2,130	1,409	2,606	9,728	1,946	2,975	3,765
2 Lanai	149	17	(6)	138	45	343	69	88	103
3 Molokai	56	13	26	45	1,851	1,991	398	612	493
4 Total	2,336	1,482	2,149	1,592	4,503	12,062	2,413	3,675	4,360

	Actual Expenditures						
Blanket Programs	2001	2002	2003	2004	2005	Total	5-Yr Avg
5 M700000	841	890	947	1,186	776	4,640	
6 M730000	531	407	102	146	58	1,244	
7 M792000	1,268	728	434	158	18	2,606	
8 M799000	64	177	36	60	55	392	
9 M800000	3,391	2,985	4,613	3,914	4,588	19,491	
10 M850000	23	30	37	31	507	628	
11 Total	6,118	5,217	6,169	5,495	6,002	29,001	5,800

CIAC as % of Expenditures 41.60%

Note: Figures may not total exactly due to rounding

Maui Electric Company, Limited  
Estimated and Recorded In-Kind Contributions-in-Aid of Construction (CIAC)  
For the Year Ending December 31, 2006

(In Thousands)

	A	B	C	D	E	F	G	H	I
	-----Actual CIAC Received-----							Note 1 Estimated	Recorded
	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>Total</u>	<u>5-Yr Avg</u>	<u>2006</u>	<u>2006</u>
1 Total	3,011	2,883	7,558	1,328	5,529	20,309	4,062	6,769	6,996

Note 1

2006 estimate is based on actuals thru 6/30/06 and by review of the pending in-kind CIAC specific projects

Note: Figures may not total exactly due to rounding

Maui Electric Company, Limited  
Estimated and Recorded 2006  
CUSTOMER ADVANCES  
(\$ Thousands)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	2006 Estimated				2006 Recorded				Reference
	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	<u>Maui</u>	<u>Lanai</u>	<u>Molokai</u>	<u>Total</u>	
1 Receipts	1,120	54	47	1,221	1,824	4	22	1,850	MECO-WP-1407A
2 Refunds	(1,499)	(187)	(61)	(1,747)	(1,550)	(187)	(161)	(1,898)	MECO-WP-1407B
3 Transfers to CIAC	(119)	(51)	(592)	(762)	(344)	(39)	(492)	(875)	MECO-WP-1406B

Maui Electric Company, Limited  
Estimated and Recorded Customer Advances Receipts  
For the Year Ending December 31, 2006

(In Thousands)

	A	B	C	D	E	F	G	H	I
	Actual Advances Received							Estimated	Actuals
Division	2001	2002	2003	2004	2005	Total	5-Yr Avg	2006	2006
1 Maui	930	1,114	1,048	1,409	981	5,482	1,096	1,120	1,824
2 Lanai	53	42	16	76	79	267	53	54	4
3 Molokai	120	55	28	27	0	231	46	47	22
4 Total	1,103	1,211	1,093	1,513	1,060	5,980	1,196	1,221	1,850

	Actual Expenditures							Estimated	Actuals
Blanket Programs	2001	2002	2003	2004	2005	Total	5-Yr Avg	2006	2006
5 M700000	841	890	947	1,186	776	4,640		948	574
6 M730000	531	407	102	146	58	1,244		254	413
7 M792000	1,268	728	434	158	18	2,606		533	97
8 M799000	64	177	36	60	55	392		80	55
9 M800000	3,391	2,985	4,613	3,914	4,588	19,491		3,984	5,253
10 M850000	23	30	37	31	507	628		128	248
11 Total	6,118	5,217	6,169	5,495	6,002	29,001	5,800	5,927	6,640

Customer Advances as % of Expenditures 20.62% 20.62%

Totals may not add due to rounding

Maui Electric Company, Limited  
Estimated and Recorded Customer Advance Refunds  
For the Year Ending December 31, 2006

	A	B	C	D	E	F	G	H	I	
	(\$ Thousands)							Note 1		
	<u>Refunds</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>5 Year Average</u>	<u>Estimated 2006</u>	<u>Recorded 2006</u>
1	Maui		837	1,226	515	776	586	788	1,499	1,550
2	Lanai		-	72	-	-	-	14	187	187
3	Molokai		39	81	32	30	9	38	61	161
4	Total		876	1,379	547	806	595	840	1,747	1,898

<u>Advance Balance Ending 12/31</u>										
5	Maui	6,485	5,397	5,282	4,884	5,411	4,569	5,492	4,072	4,499
6	Lanai	209	262	239	256	331	409	259	226	186
7	Molokai	2,743	2,778	2,752	2,634	2,620	790	2,705	185	160
8		9,437	8,437	8,273	7,774	8,362	5,768	8,456	4,483	4,845

Refunds as a % of Prior Year Ending Balance

Maui	12.91%	22.72%	9.76%	15.88%	10.83%	14.42%
Lanai	0.00%	27.49%	0.00%	0.00%	0.00%	5.50%
Molokai	1.41%	2.93%	1.15%	1.12%	0.34%	1.39%

Note 1

2006 estimate is based on actuals thru 6/30/06 and by trending for the remaining year based on the historical 5-year refund percentage average

CA-IR-185

**Ref: MECO-WP-1401B (2007 Plant Additions).**

Please provide a listing of MECO's current best estimate of plant addition projects expected to be completed and placed in service during 2007, including the following information:

- a. Project number and description.
- b. Actual cumulative expenditures at December 31, 2005, if any.
- c. Actual project expenditures during 2006, if any.
- d. Projected project expenditures during 2007, if any.
- e. Projected completion date for each project.

**MECO Response:**

See Attachment 1 for a listing of actual plant addition projects completed and placed in service in 2007, which includes the applicable project number and project description, actual cumulative expenditures at December 31, 2005 (column A), actual project expenditures during 2006 (column B), projected project expenditures during 2007 (column C), if any, and the actual or projected completion date for each project (column D).



Maui Electric Company, Limited  
Estimated Specific Project Costs By Project Number  
Completed In The Year Ending December 31, 2007

Project #	Description	A Cumulative Expenditures at 12/31/05	B 2006 Project Expenditures	C 2007 Projected Expenditures	D Completion Date
1 Aldic16	Kehalani South	-	-	228,036	2007/09
2 Aldica15_	Kehalani Site 10	-	-	188,885	2007/12
3 BJohns25_	Mokulele Hwy Widening PH1A-St Lts	-	-	136,846	2007/09
4 BJohns29_	Hokulani Golf Villas	-	-	520,448	2007/12
5 DOste26_	Ho'olei	-	-	179,517	2007/09
6 DTaka53_	Engineering Storage Trailer	-	-	17,982	2007/09
7 M0000111	Peahi Sub 94	-	473,057	64,641	2007/07
8 M0000423	K1 Generator Rotor Rewind	-	-	474,023	2007/10
9 M0000558	K1 Generator Stator Rewind	-	-	466,411	2007/10
10 M0000617	Nahiku Subdivision	-	-	161,681	2007/06
11 M0000629	M14 CT Controls	-	-	638,613	2007/06
12 M0000652	SOH: Molokai Kawaikapu Bridge UA# 1678	24,625	2,951	9,717	2007/12
13 M0000659	Makawao 1200 KVAR Cap Bank	2,360	-	62,585	2007/11
14 M0000660	Paia 23kV Breaker Repl	-	-	42,422	2007/07
15 M0000668	Hana Mobile Radio Upgrade	28,150	5,065	57,252	2007/11
16 M0000680	County of Maui-Mkt St Impvts	46,765	5,454	1,942	2007/12
17 M0000687	Kanaha Tsf #B Replacement	-	116	872,399	2007/10
18 M0000688	KPP Spare Tsf Replacement	-	-	105,525	2007/12
19 M0000697	69kV Reloc Waikapu	-	83,365	1,634,717	2007/11
20 M0000716	Install Viper-E25 Onehee Ave	-	-	82,989	2007/11
21 M0000724	K1 Static Exciter	-	-	188,384	2007/09
22 M0000725	K2 Static Exciter	-	28,759	160,702	2007/02
23 M0000741	Clemence Subdivision	5,858	3,851	33,006	2007/09
24 M0000745	Sys Imp Piihola Farms III	-	42,134	9,143	2007/09
25 M0000750	KPP UPS Battery Charger	-	33,285	1,504	2007/01
26 M0000751	Trans.-Radiator MPP M123	-	43,183	-	2007/12
27 M0000767	System Improvements Hikini Subdivision	-	8,643	126,316	2007/09
28 M0000775	West Maui Breakers	-	12,492	59,731	2007/12
29 M0000777	KPP K2 Tsf Replacement	-	844	306,751	2007/11
30 M0000781	Peahi Farms Offsite	-	112,107	350,476	2007/08
31 M0000782	KPP Compressor	-	-	95,999	2007/12
32 M0000783	KPP Tank#4 Roof	-	-	51,284	2007/09
33 M0000784	KPP Welding Lean to	-	-	39,687	2007/07
34 M0000786	MPP Fuel Oil Transfer Pumps	-	-	102,433	2007/10
35 M0000787	KPP Used Oil Berm	-	-	104,625	2007/09
36 M0000790	M12/13 CEMS Replacement	-	-	404,230	2007/09
37 M0000792	MPP E-Cell	-	-	188,716	2007/07
38 M0000794	LL6 Radiator	-	-	78,123	2007/12
39 M0000805	Relocate Camp Maui	-	-	424,339	2007/12
40 M0000807	Mahinahina Sub 50 Repl Tsf 2	-	47	738,768	2007/11
41 M0000808	Kihei 35 Add-Dist. To Hi Tech	-	-	130,376	2007/12
42 M0000809	Kihei Substation 35 - Transformer/Switchgear #4 Adc	-	2,387	1,164,820	2007/11
43 M0000810	Napili Sub 29 Tsf. 2 Replace	-	47	741,607	2007/12
44 M0000813	MW Antenna Analyzer	-	-	25,107	2007/12
45 M0000815	Hana DG Parallel Operations	-	104,586	258,102	2007/11
46 M0000820	Lanai Env Bldg Firesprinkler	-	-	52,946	2007/11
47 M0000822	Admin Transfer Switch	-	-	34,073	2007/10
48 M0000829	Ke Alii Villas	-	30,119	127,844	2007/06

Maui Electric Company, Limited  
Estimated Specific Project Costs By Project Number  
Completed In The Year Ending December 31, 2007

			A	B	C	E
			Cumulative	2006	2007	Completion
			Expenditures	Expenditures	Expenditures	Date
	Project #	Description	at 12/31/05			
49	M0000832	Molokai 34kV OH Insulators	-	-	70,644	2007/08
50	M0000835	12th Inc. Reconduct Ani St.	-	-	153,782	2007/12
51	M0000841	Sys Impvts Kapalua Vg Ph 1	-	32,494	12,624	2007/09
52	M0000842	Waiohuli Hikina Subdivision	-	15,249	136,841	2007/07
53	M0000846	Highlands Estates Well Pump	-	13,329	125,477	2007/03
54	M0000847	Kilohana Waena Subdivision	-	22,705	31,864	2007/05
55	M0000848	The Courts @ Lanai City	-	23,062	27,195	2007/06
56	M0000850	SF6 Recovery System	-	-	24,610	2007/01
57	M0000853	Caputo-OH to UG Conversion	-	150,529	22,911	2007/05
58	M0000854	Kihei Commercial Condo	-	17,648	81,265	2007/05
59	M0000857	St. Francis Onsite	-	22,373	137,873	2007/06
60	M0000858	Waiolani Pikake Sub'd	-	8,916	41,690	2007/09
61	M0000859	Papali Wailea	-	20,190	48,659	2007/05
62	M0000860	Waiehu Kou Sub'd Ph 4	-	10,116	173,810	2007/07
63	M0000861	Kaanapali Sub'd	-	8,565	310	2007/12
64	M0000862	Parcel C Phase 2	-	7,997	40,327	2007/09
65	M0000863	E Paepae Sub'd	-	36,076	32,504	2007/06
66	M0000864	Emergency Communications	-	5,102	15,974	2007/06
67	M0000865	MPP Security Camera Systems	-	-	52,338	2007/06
68	M0000869	Maui Lani Subd Ph7 Incr3	-	-	159,419	2007/06
69	M0000870	Waiehu Well Reclosers	-	-	275,139	2007/12
70	M0000871	Trans-Radiator K1	-	-	58,956	2007/08
71	M0000872	Ukumehame Ag Sub'd	-	-	363,381	2007/11
72	M0000873	Kaanapali Dev Corp Pole Relo	-	-	34,569	2007/07
73	M0000874	Maui Oil Ofc Bldg/Car Wash	-	-	37,319	2007/02
74	M0000875	Kehalani Mauka Parkway Ext	-	-	250,019	2007/05
75	M0000876	Sys Upgrade 7.2 kV Waiko Rd	-	-	22,949	2007/08
76	M0000877	Waiehu Kou Subd Ph 4 Offsite	-	-	39,381	2007/07
77	M0000878	Waikapu Gardens Ph4	-	-	126,725	2007/05
78	M0000879	M19 Hydraulic Starter Motor	-	-	68,184	2007/03
79	M0000880	Repair Order RO008241	-	-	48,707	2007/02
80	M0000881	Huelo Distr Upgrade	-	-	52,237	2007/07
81	M0000882	Phil Christopher	-	-	32,714	2007/09
82	M0000883	Flannery Offsite Project	-	-	45,634	2007/07
83	M0000885	SOH Mokulele Hwy PH1A/UA	-	-	68,612	2007/10
84	M0000886	Kanepu'u	-	-	114,684	2007/07
85	M8020000	In-Kind CIAC Maui	-	-	6,931,456	Various
86	MFern36	Consolidated Baseyards 69/23 kV Reloc	-	-	97,905	2007/10
87	MFern37	Consolidated Bseyards Subd	-	-	227,687	2007/11
88	MFern38	Ritz Carlton Kapalua UG Reloc	-	-	140,313	2007/12
89	MFernan34_	Kualapa Loop	-	-	124,568	2007/12
90	WShim24_	Hoonanea	-	-	27,547	2007/11
91	WShimizu20	Ukumehame Ag Offsite	-	-	245,931	2007/10
92		Total	107,758	1,386,843	15,839,003	

CA-IR-185

**Ref: MECO-WP-1401B (2007 Plant Additions).**

Please provide a listing of MECO's current best estimate of plant addition projects expected to be completed and placed in service during 2007, including the following information:

- a. Project number and description.
- b. Actual cumulative expenditures at December 31, 2005, if any.
- c. Actual project expenditures during 2006, if any.
- d. Projected project expenditures during 2007, if any.
- e. Projected completion date for each project.

**MECO Response:**

As stated in the response to CA-IR-184, the Company's current best estimate for 2007 plant additions is not presently available and is anticipated to be provided in the June 2007 update.

CA-IR-186

**Ref: MECO-WP-1401A (2006 Plant Additions).**

Please provide a listing of the actual plant addition projects completed and placed in service during 2006, including the following information:

- a. Project number and description.
- b. Actual cumulative expenditures at December 31, 2005, if any.
- c. Actual project expenditures during 2006, if any.
- d. Any straggling expenditures during 2007, if any.
- e. Actual completion date for each project.

**MECO Response:**

See Attachment 1 for a listing of actual plant addition projects completed and placed in service in 2006, which includes the applicable project number and project description, actual cumulative expenditures at December 31, 2005 (column A), actual project expenditures during 2006 (column B), projected straggling expenditures during 2007 (column C), if any, and the actual completion date for each project (column D).

Maui Electric Company, Limited  
Specific Project Costs By Project Number  
Completed and Placed in Service During 2006

			A	B	C	D
	Project #	Description	Cumulative Expenditures at 12/31/2005	2006 Project Expenditures	2007 Straggling Costs	Completion Date
1	M0000012	Waiinu Sub 36 Unit Sub/69kv Brkr Addn	1,405,041	683,701	38,211	4/25/2006
2	M0000041	Waihee Village Conv	147,220	109,812		4/1/2006
3	M0000489	Sub 93 Site Acquisition	32,364	520		3/3/2006
4	M0000525	SOH H'akala Hwy Widening	29,462	159,646	882	11/29/2006
5	M0000544	Kahului Airport Improv	8,964	43,043		11/9/2006
6	M0000561	Waiko Industrial Subdiv	58,955	122,971	(2,551)	12/9/2006
7	M0000596	ICS-Radio Replacement	-	373,656		6/15/2006
8	M0000611	Kehalani Subd Offsite 23kV	96,550	33,420		8/4/2006
9	M0000612	Kehalani Subd Offsite 12kV	325,447	6		4/10/2006
10	M0000626	M11 Generator Pole Piece Rep	-	470,935		6/1/2006
11	M0000630	Lahaina Business Park-Ph 2	18,590	250,713		12/1/2006
12	M0000631	Hope Chapel	25,938	18,491		7/5/2006
13	M0000645	Holomua-Maliko Gulch 23kV Reloc	362,657	0		7/1/2006
14	M0000656	COM Pookela Wells Pump	79,923	13,471		9/1/2006
15	M0000657	Sand Hills Subd	85,009	115,924		2/3/2006
16	M0000675	Kula Ag Park	36,834	174,656		6/9/2006
17	M0000677	Alternate Dispatch	721,439	141,821		5/15/2006
18	M0000682	Hana SCADA/Fiber	258,938	76,478	4,494	12/12/2006
19	M0000685	Baldwin Pk to Holomua	573,862	110,376	687	9/1/2006
20	M0000712	Kihei Sub 35 Replace Tsf 2	-	519,639	868	6/19/2006
21	M0000714	Kihei Sub 35 Replace Tsf 1	-	529,455	833	10/5/2006
22	M0000715	Kah Sub Tsf 8-3 Replace	243	612,062		9/1/2006
23	M0000722	M14 CEMS Replacement	-	166,544	88,525	11/17/2006
24	M0000723	M16 CEMS Replacement	-	165,450	88,897	11/17/2006
25	M0000726	K4 Vibration Monitor	-	19,551		6/30/2006
26	M0000730	Sub 36 Unit 3 Tsf Addn	-	966,509	30,342	12/10/2006
27	M0000739	Makila Hydro	-	17,383		10/1/2006
28	M0000740	Kehalani Offsite Reloc	3,406	41,134		4/11/2006
29	M0000742	Lanikeha Sub'd-PH1	32,001	23,615		1/6/2006
30	M0000743	Aud.Grease Interceptor	124	34,778		10/27/2006
31	M0000744	Maui R and T Ph 1/Incr 1	7,146	16,886		2/1/2006
32	M0000748	SOH Mokulele Hwy PH1B	-	126,600	21,898	12/1/2006
33	M0000752	Dist-Radiator K2 Replace	-	98,721		11/1/2006
34	M0000753	Cable Diagnostic Package Sys	-	30,285		6/20/2006
35	M0000754	Test Boards & Warm-up Boards	-	111,730		6/21/2006
36	M0000755	CKT 1398 SEL351 Upgrade	-	44,856		5/26/2006
37	M0000756	MECO Network LC 2006	-	39,221		12/1/2006
38	M0000757	K1-4 Synchronizer	-	36,799		7/14/2006
39	M0000759	#1 Fuel Oil Tank roof	-	49,426		7/27/2006
40	M0000760	Waikapu Gardens Ph1	-	100,983		6/1/2006
41	M0000761	Kai Malu @ Wailea	-	196,893	-	11/9/2006
42	M0000762	GT1 Exhaust	-	24,317		11/17/2006
43	M0000763	MGC Borescope	-	43,724		10/1/2006
44	M0000764	Mahanalua Nui Subdivision-PH4	-	233,904		8/25/2006
45	M0000765	Kihei Kauhale Subd	-	36,638	579	1/11/2007
46	M0000766	Ke Alii Kai II Subdivision	-	66,046		5/18/2006
47	M0000768	Wailea MF-5 (Wailea Kanani)	-	113,102		10/1/2006
48	M0000769	Honolua Ridge PH-II	-	319,196		9/29/2006
49	M0000770	Kamali'i Alayna Subd	-	149,575	13	11/6/2006

Maui Electric Company, Limited  
Specific Project Costs By Project Number  
Completed and Placed in Service During 2006

			A	B	C	D
	Project #	Description	Cumulative Expenditures at 12/31/2005	2006 Project Expenditures	2007 Straggling Costs	Completion Date
50	M0000771	Kamali'i Alayna OS	-	122,603	1,844	11/6/2006
51	M0000772	Maui Hi Perf Computer Ctr	-	57,032		9/1/2006
52	M0000776	KPP Scaffolds	-	19,167		10/20/2006
53	M0000778	Westin KOR Villas	-	64,227	84	12/8/2006
54	M0000779	Waikapu Gardens Ph2	-	159,821		10/1/2006
55	M0000780	Maui Lani Ph7 Incr2	-	189,947	10,203	9/8/2006
56	M0000814	Power Factor Tester	-	39,889	-	12/20/2006
57	M0000836	2006 48v Bat/Chgr/Rclr Bat	-	23,179		12/1/2006
58	M0000837	Kehalani Site 22 (Ohia Ph3)	-	66,663		9/7/2006
59	M0000838	Kapalua Village Ph 1	-	118,910		9/15/2006
60	M0000839	Kai Makani Condo Offsite	-	121,533	3,620	9/28/2006
61	M0000840	2006 Office Renovation	-	52,191	(16,305)	12/21/2006
62	M0000843	Maui Lani Elementary School	-	33,191		12/13/2006
63	M0000844	Kihei Comm HH Reloc	-	26,281	339	12/14/2006
64	M0000845	Land Court 960 Subdivision	-	68,859	45,891	10/26/2006
65	M0000849	2006 Reclosers & Relays	-	65,744		10/27/2006
66	M0000851	Waikapu Gardens Ph3	-	42,398		11/29/2006
67	M0000852	Kai Makani Condo's Onsite	-	34,067	66,960	12/20/2006
68	M0000855	Keokea Five LLC	-	44,063	(1,737)	12/27/2006
69	M0000866	E-Cell Stacks	-	84,565		12/1/2006
70	M0000867	KWP 1 Wind Farm	-	511,322	1,030	12/31/2006
71	M0000868	Makila Hydro Interconnection	-	37,434	8,517	12/31/2006
72	M3141001	MPP M18-18 MW Steam Turbine NI	22,245,733	38,678,011	3,887,239	10/27/2006
73	M8020000	In-Kind CIAC Maui		6,995,788	-	Various
74		<b>Total</b>	<b>26,555,846</b>	<b>55,491,549</b>	<b>4,281,361</b>	

CA-IR-186

**Ref: MECO-WP-1401A (2006 Plant Additions).**

Please provide a listing of the actual plant addition projects completed and placed in service during 2006, including the following information:

- a. Project number and description.
- b. Actual cumulative expenditures at December 31, 2005, if any.
- c. Actual project expenditures during 2006, if any.
- d. Any straggling expenditures during 2007, if any.
- e. Actual completion date for each project.

**MECO Response:**

See Attachment 1 for a listing of actual plant addition projects completed and placed in service in 2006, which includes the applicable project number and project description, actual cumulative expenditures at December 31, 2005 (column A), actual project expenditures during 2006 (column B), if any, and the actual completion date for each project (column C). As stated in the response to CA-IR-184, the Company's current best estimate for 2007 plant additions is not presently available and is anticipated to be provided in the June 2007 update. The 2007 related straggling costs for the projects completed and placed in service during 2006 are also not presently available and are also anticipated to be provided as part of the June 2007 update.

Maui Electric Company, Limited  
Specific Project Costs By Project Number  
Completed and Placed in Service During 2006

			(A)	(B)	(C)
			Cumulative		
			Expenditures	2006 Project	Completion
	Project #	Description	at 12/31/2005	Expenditures	Date
1	M0000012	Waiinu Sub 36 Unit Sub/69kv Brkr Addn	1,405,041	683,701	4/25/2006
2	M0000041	Waihee Village Conv	147,220	109,812	4/1/2006
3	M0000489	Sub 93 Site Acquisition	32,364	520	3/3/2006
4	M0000525	SOH H'akala Hwy Widening	29,662	159,646	11/29/2006
5	M0000544	Kahului Airport Improv	8,964	43,043	11/9/2006
6	M0000561	Waiko Industrial Subdiv	58,955	122,971	12/9/2006
7	M0000596	ICS-Radio Replacement	-	373,656	6/15/2006
8	M0000611	Kehalani Subd Offsite 23kV	96,550	33,420	8/4/2006
9	M0000612	Kehalani Subd Offsite 12kV	325,447	6	4/10/2006
10	M0000626	M11 Generator Pole Piece Rep	-	470,935	6/1/2006
11	M0000630	Lahaina Business Park-Ph 2	18,590	250,713	12/1/2006
12	M0000631	Hope Chapel	25,938	18,491	7/5/2006
13	M0000645	Holomua-Maliko Gulch 23kV Reloc	362,657	0	7/1/2006
14	M0000656	COM Pookela Wells Pump	79,923	13,471	9/1/2006
15	M0000657	Sand Hills Subd	85,009	115,924	2/3/2006
16	M0000675	Kula Ag Park	36,834	174,656	6/9/2006
17	M0000677	Alternate Dispatch	721,439	141,821	5/15/2006
18	M0000682	Hana SCADA/Fiber	258,938	76,478	12/12/2006
19	M0000685	Baldwin Pk to Holomua	573,862	110,376	9/1/2006
20	M0000712	Kihei Sub 35 Replace Tsf 2	-	519,639	6/19/2006
21	M0000714	Kihei Sub 35 Replace Tsf 1	-	529,455	10/5/2006
22	M0000715	Kah Sub Tsf 8-3 Replace	243	612,062	9/1/2006
23	M0000722	M14 CEMS Replacement	-	166,544	11/17/2006
24	M0000723	M16 CEMS Replacement	-	165,450	11/17/2006
25	M0000726	K4 Vibration Monitor	-	19,551	6/30/2006
26	M0000730	Sub 36 Unit 3 Tsf Addn	-	966,509	12/10/2006
27	M0000739	Makila Hydro	-	17,383	10/1/2006
28	M0000740	Kehalani Offsite Reloc	3,406	41,134	4/11/2006
29	M0000742	Lanikona Sub'd-PH1	32,001	23,615	1/6/2006
30	M0000743	AUG Grease Interceptor	124	34,778	10/27/2006
31	M0000744	Maui R and T Ph 1/Incr 1	7,146	16,886	2/1/2006
32	M0000748	SOH Mokulele Hwy PH1B	-	126,600	12/1/2006
33	M0000752	Dist-Radiator K2 Replace	-	98,721	11/1/2006
34	M0000753	Cable Diagnostic Package Sys	-	30,285	6/20/2006
35	M0000754	Test Boards & Warm-up Boards	-	111,730	6/21/2006
36	M0000755	CKT 1398 SEL351 Upgrade	-	44,856	5/26/2006
37	M0000756	MECO Network LC 2006	-	39,221	12/1/2006
38	M0000757	K1-4 Synchronizer	-	36,799	7/14/2006
39	M0000759	#1 Fuel Oil Tank roof	-	49,426	7/27/2006
40	M0000760	Waikapu Gardens Ph1	-	100,983	6/1/2006
41	M0000761	Kalihi @ Wailea	-	196,893	11/9/2006
42	M0000762	GT1 Exhaust	-	24,317	11/17/2006
43	M0000763	MGC Borescope	-	43,724	10/1/2006



Maui Electric Company, Limited  
Specific Project Costs By Project Number  
Completed and Placed in Service During 2006

			(A)	(B)	(C)
			Cumulative	2006 Project	Completion
	Project #	Description	Expenditures	Expenditures	Date
			at 12/31/2005		
44	M0000764	Mahanalua Nui Subdivision-PH4	-	233,904	8/25/2006
45	M0000765	Kihei Kauhale Subd	-	36,638	1/11/2007
46	M0000766	Ke Alii Kai II Subdivision	-	66,046	5/18/2006
47	M0000768	Wailea MF-5 (Wailea Kanani)	-	113,102	10/1/2006
48	M0000769	Honolua Ridge PH-II	-	319,196	9/29/2006
49	M0000770	Kamali'i Alayna Subd	-	149,575	11/6/2006
50	M0000771	Kamali'i Alayna OS	-	122,603	11/6/2006
51	M0000772	Maui Hi Perf Computer Ctr	-	57,032	9/1/2006
52	M0000776	KPP Scaffolds	-	19,167	10/20/2006
53	M0000778	Westin KOR Villas	-	64,227	12/8/2006
54	M0000779	Waikapu Gardens Ph2	-	159,821	10/1/2006
55	M0000780	Maui Lani Ph7 Incr2	-	189,947	9/8/2006
56	M0000814	Power Factor Tester	-	39,889	12/20/2006
57	M0000836	2006 48v Bat/Chgr/Rclr Bat	-	23,179	12/1/2006
58	M0000837	Kehalani Site 22 (Ohia Ph3)	-	66,663	9/7/2006
59	M0000838	Kapalua Village Ph 1	-	118,910	9/15/2006
60	M0000839	Kai Makani Condo Offsite	-	121,533	9/28/2006
61	M0000840	2006 Office Renovation	-	52,191	12/21/2006
62	M0000843	Maui Lani Elementary School	-	33,191	12/13/2006
63	M0000844	Kihei Comm HH Reloc	-	26,281	12/14/2006
64	M0000845	Land Court 960 Subdivision	-	68,859	10/26/2006
65	M0000849	2006 Reclosers & Relays	-	65,744	10/27/2006
66	M0000851	Waikapu Gardens Ph3	-	42,398	11/29/2006
67	M0000852	Kai Makani Condo's Onsite	-	34,067	12/20/2006
68	M0000855	Keokea Five LLC	-	44,063	12/27/2006
69	M0000866	E-Cell Stages	-	84,565	12/1/2006
70	M0000867	KWP 1 Wind Farm	-	511,322	12/31/2006
71	M0000868	Makila Hydro Interconnection	-	37,434	12/31/2006
72	M3141001	MPP M18-18 MW Steam Turbine NI	22,245,733	38,678,011	10/27/2006
73	M8020000	In-Land CIAC Maui		6,995,788	Various
74		<b>Total</b>	<b>26,555,846</b>	<b>55,491,549</b>	

CA-IR-187

**Ref: MECO-WP-1401A (2006 Plant Additions).**

With regard to the projects that MECO's original filing expected to be completed and placed in service during 2006, please provide the following:

- a. Please identify each project that was subsequently cancelled or delayed.
- b. Referring to part (a) above, please explain why each project was cancelled or delayed.

**MECO Response:**

- a. See Attachment 1 for a listing of projects referenced in MECO-WP-1401A that were delayed together with a brief explanation why these projects were delayed. None of the projects referenced in MECO-WP-1401A were cancelled.
- b. See Attachment 1 and the response to part a. above.

Maui Electric Company, Limited

Delayed Projects

For The Year Ending December 31, 2006

			(A)	(B)	(C)
			2006	2006	
	<u>Project #</u>	<u>Description</u>	<u>Estimated</u>	<u>Recorded</u>	<u>Reason for Delay</u>
1	M0000111	Peahi Sub 94	510,959	-	Project delayed due to our inability to energize the substation as a result of the delays in the completion of project M0000781 (Peahi Farms Offsite)
2	M0000617	Nahiku Subdivision	95,696	-	Project delayed due to weather and customer's contractor delays.
3	M0000668	Hana Mobile Radio Upgrade	52,017	-	Project delayed pending PUC approval which approval was received in March 2007
4	M0000745	Sys Imp Piiholo Farms III	10,415	-	Project delayed due to a defective material
5	M0000750	KPP UPS Battery Charger	21,626	-	Project delayed due to conflicts in scheduling an outage to minimize potential tripping of our generating units in the course of installing the UPS Battery Charger for KPP.
6	M0000751	Trans.-Radiator MPP M123	89,511	-	Project delayed until the units are available for installation of the transformer radiators
7	M0000781	Peahi Farms Offsite	408,876	-	Project delayed due to weather and customer's contractor delays.
8	M0000815	Hana DG Parallel Operations	248,974	-	Project delayed pending PUC approval for project M0000668, which approval was received in March 2007, is needed to be in service in order to provide a communication link for the direct trip transfer scheme
9	WShimizu12	Waiohuli Hikina Subdivision	101,705	-	Project delayed due to customer's contractor delays.
10	WShimizu14	System Improvements Kapalua Village Ph1	28,176	-	Project delayed due to shortage of contruction labor
11			1,567,955	-	

CA-IR-188

**Ref: MECO-WP-1401A (2006 Plant Additions).**

Did MECO complete and place in service any construction projects during 2006, which were not actually closed to plant in service as of December 31, 2006? If so, please provide the following:

- a. Project number and description.
- b. Actual cumulative expenditures on each completed project as of December 31, 2006.
- c. The amount of any straggling expenditures made in 2007 for each project.
- d. The date on which MECO stopped accruing AFUDC on each identified project.
- e. The date on which MECO commenced recording depreciation expense on each identified project.
- f. An explanation as to why each identified project was not closed to plant in service as of December 31, 2006.

**MECO Response:**

There are no projects that were completed and placed in service during 2006 that were not closed to plant-in-service as of December 31, 2006.

CA-IR-189

**Ref: MECO-WP-1401A (2006 Plant Additions, CIAC & Customer Advances).**

For each project completed during 2006 that involve related CIAC or customer advances, please provide the following:

- a. Please provide each project number and description.
- b. Please provide the amount of any CIAC or customer advance associated with each project, indicating whether the amounts are actual or estimated values.
- c. Referring to part (b) above, please provide the amount of any CIAC or customer advances actually collected and recorded as of December 31, 2006.
- d. Referring to part (b) above, please provide the amount of any CIAC or customer advances to be collected and recorded in 2007, indicating whether the identified amount has been collected or is yet to be collected in 2007.
- e. Referring to part (b) above, please provide the amount of any CIAC or customer advances that are expected to be collected and recorded in 2008.

**MECO Response:**

See Attachment 1 for a listing of projects referenced in MECO-WP-1401A and completed during 2006 that involve related CIAC or Customer Advances.

**Maui Electric Company, Limited  
CIAC and Customer Advances**

CIAC						CUSTOMER ADVANCES					
Project	Description	Actual Receipts	Amount Collected as of 12/31/06	Amount Collected in 2007	Amount Yet To Be Collected in 2007	Amount Expected To Be Collected and Recorded in 2008	Actual Receipts	Amount Collected as of 12/31/06	Amount Collected in 2007	Amount Yet To Be Collected in 2007	Amount Expected To Be Collected and Recorded in 2008
M0000561	Waiko Industrial Subdiv	82,396	82,396	-	-	-	16,446	16,446	-	-	-
M0000630	Lahaina Business Park-Ph 2	121,180	121,180	-	-	-	58,672	58,672	-	-	-
M0000739	Makila Hydro	6,816	6,816	-	-	-	-	-	-	-	-
M0000742	Lanikeha Sub'd-PH1	96,466	96,466	-	-	-	175,558	175,558	-	-	-
M0000760	Waikapu Gardens Ph1	20,233	20,233	-	-	-	-	-	-	-	-
M0000761	Kai Malu @ Wailea	50,529	50,529	-	-	-	-	-	-	-	-
M0000764	Mahanalua Nui Subdivision-PH4	91,997	91,997	-	-	-	143,610	143,610	-	-	-
M0000765	Kihei Kauhale Subd	2,635	2,635	-	-	-	27,867	27,867	-	-	-
M0000768	Wailea MF-5 (Wailea Kanani)	37,991	37,991	-	-	-	61,050	61,050	-	-	-
M0000769	Honolua Ridge PH-II	105,177	105,177	-	-	-	123,154	123,154	-	-	-
M0000770	Kamali'i Alayna Subd	48,645	48,645	-	-	-	129,361	129,361	-	-	-
M0000771	Kamali'i Alayna OS	47,930	47,930	-	-	-	-	-	-	-	-
M0000778	Westin KOR Villas	2,822	2,822	-	-	-	-	-	-	-	-
M0000779	Waikapu Gardens Ph2	80,136	80,136	-	-	-	-	-	-	-	-
M0000780	Maui Lani Ph7 Incr2	74,584	74,584	-	-	-	-	-	-	-	-
M0000837	Kahalani Site 22 (Ohia Ph3)	38,745	38,745	-	-	-	45,113	45,113	-	-	-
M0000844	Kihei Comm HH Reloc	26,117	26,117	-	-	-	-	-	-	-	-
M0000851	Waikapu Gardens Ph3	14,169	14,169	-	-	-	-	-	-	-	-
M0000855	Keokea Five LLC	7,063	7,063	-	-	-	28,154	28,154	-	-	-
M0000867	KWP 1 Wind Farm	502,000	502,000	-	-	-	-	-	-	-	-
Blanket Projects		800,878	793,569	7,229	79	-	484,089	451,020	33,069	-	-
Total		2,258,509	2,251,201	7,229	79	-	1,293,075	1,260,006	33,069	-	-

CA-IR-190

**Ref: MECO-WP-1401B (2007 Plant Additions, CIAC & Customer Advances).**

For each project completed or expected to be completed during 2007 that involve related CIAC or customer advances, please provide the following:

- a. Please provide each project number and description.
- b. Please provide the amount of any CIAC or customer advance associated with each project, indicating whether the amounts are actual or estimated values.
- c. Referring to part (b) above, please provide the amount of any CIAC or customer advances actually collected and recorded as of December 31, 2006.
- d. Referring to part (b) above, please provide the amount of any CIAC or customer advances to be collected and recorded in 2007, indicating whether the identified amount has been collected or is yet to be collected in 2007.
- e. Referring to part (b) above, please provide the amount of any CIAC or customer advances that are expected to be collected and recorded in 2008.

**MECO Response:**

See Attachment 1 for a listing of specific projects referenced in MECO-WP-1401B and completed during 2007 that involve related CIAC or customer advances. For CIAC and customer advances associated with programs, in order to provide the information requested, hundreds of service/work orders would need to be reviewed which would be extremely burdensome. As such, the related CIAC and customer advances for programs are not included in Attachment 1.

**Maul Electric Company, Limited**  
**2007 Test Year**  
**CIAC and Customer Advances for Completed Projects**

		CIAC					CUSTOMER ADVANCES				
Project	Description	Actual Receipts	Amount Collected as of 12/31/06	Amount Collected in 2007	Amount Yet To Be Collected in 2007	Amount Expected To Be Collected and Recorded in 2008	Actual Receipts	Amount Collected as of 12/31/06	Amount Collected in 2007	Amount Yet To Be Collected in 2007	Amount Expected To Be Collected and Recorded in 2008
Aldic16	Kehalani South	152,423	122,465	-	29,957	-	75,613	58,105	-	17,507	-
Aldica15	Kehalani Site 10	64,252	-	-	64,252	-	115,277	-	-	115,277	-
BJohns25	Mokulele Hwy Widening PH1A-St Lts	79,387	-	79,387	-	-	4,297	-	4,297	-	-
DOste26	Ho'olei	106,694	102,904	3,790	-	-	72,414	60,047	12,367	-	-
M0000617	Nahiku Subdivision	2,808	2,808	-	-	-	97,827	97,827	-	-	-
M0000652	SOH: Molokai Kawaikapu Bridge UA# 1678	9,369	9,369	-	-	-	-	-	-	-	-
M0000680	County of Maui-Mkt St Impvts	26,100	-	-	26,100	-	-	-	-	-	-
M0000741	Clemence Subdivision	16,564	15,824	740	-	-	-	-	-	-	-
M0000829	Ke Alii Villas	14,297	14,297	-	-	-	72,247	72,247	-	-	-
M0000842	Waiohuli Hikina Subdivision	-	-	-	-	-	146,782	130,111	16,671	-	-
M0000847	Kilohana Waena Subdivision	5,041	5,041	-	-	-	34,212	34,212	-	-	-
M0000848	The Courts @ Lanai City	3,889	3,889	-	-	-	15,272	15,272	-	-	-
M0000859	Papali Wailea	21,175	5,465	15,710	-	-	47,162	44,917	2,246	-	-
M0000862	Parcel C Phase 2	27,420	27,420	-	-	-	27,683	27,683	-	-	-
M0000869	Maui Lani Subd Ph7 Incr3	25,371	25,371	-	-	-	-	-	-	-	-
M0000872	Ukumehame Ag Sub'd	127,216	-	13,584	113,632	-	213,178	-	21,318	191,860	-
M0000874	Maui Oil Ofc Bldg/Car Wash	11,441	11,441	-	-	-	3,259	3,259	-	-	-
M0000875	Kehalani Mauka Parkway Ext	134,409	134,409	-	-	-	76,950	76,950	-	-	-
M0000877	Waiehu Kou Subd Ph 4 Offsite	32,032	-	32,032	-	-	-	-	-	-	-
M0000878	Waikapu Gardens Ph4	53,327	-	53,327	-	-	-	-	-	-	-
M0000882	Phil Christopher	20,855	3,243	17,612	-	-	3,772	1,901	1,870	-	-
M0000885	SOH Mokulele Hwy PH1A/UA	33,110	-	-	-	33,110	-	-	-	-	-
M0000886	Kanepu'u	60,445	43,953	16,492	-	-	-	-	-	-	-
MFern37	Consolidated Bseyards Subd	122,902	-	12,290	110,612	-	11,167	-	11,167	-	-
WShimizu20	Ukumehame Ag Offsite	228,173	-	22,817	205,356	-	-	-	-	-	-
Total		1,378,699	527,900	267,780	549,909	33,110	1,017,111	622,531	69,936	324,644	-



CA-IR-190

**Ref: MECO-WP-1401B (2007 Plant Additions, CIAC & Customer Advances).**

For each project completed or expected to be completed during 2007 that involve related CIAC or customer advances, please provide the following:

- a. Please provide each project number and description.
- b. Please provide the amount of any CIAC or customer advance associated with each project, indicating whether the amounts are actual or estimated values.
- c. Referring to part (b) above, please provide the amount of any CIAC or customer advances actually collected and recorded as of December 31, 2006.
- d. Referring to part (b) above, please provide the amount of any CIAC or customer advances to be collected and recorded in 2007, indicating whether the identified amount has been collected or is yet to be collected in 2007.
- e. Referring to part (b) above, please provide the amount of any CIAC or customer advances that are expected to be collected and recorded in 2008.

**MECO Response:**

As stated in the response to CA-IR-184, the Company's current best estimate for 2007 for Plant Additions, CIAC and Customer Advances is not presently available and is anticipated to be provided in the June 2007 update. As such, the information requested above will be provided as part of this update.

CA-IR-191

**Ref: MECO T-18, pages 19-27 - (Power Factor Costs/Prices).**

In recent HECO and HELCO rate proceedings, the Company was unable to provide cost support for its power factor rate elements and has committed to perform studies to identify and quantify relevant costs for this tariff element. Please provide the following:

- a. Copies of reports, analyses, workpapers, projections and other documentation associated with all work done with regard to this issue for MECO, if any.
- b. A detailed statement of all work planned to complete the referenced study, indicating any contractors to be employed, employees to be assigned, and specific tasks anticipated to be involved in the completion of this work.
- c. What is the Company's estimate of the timeline, milestones and completion date for the study of power factor cost of service issues for MECO and the HELCO systems?

**MECO Response:**

- a. There has been no work done with regard to this issue for MECO.
- b. There is currently no work planned for any MECO study of power factor cost of service issues. For the purposes of settlement in their respective current rate cases, HELCO (Docket No. 05-0315) and HECO (Docket No. 2006-0386) have each agreed to conduct a power factor study for their next general rate case.
- c. See the response to part b. above.

CA-IR-192

**Ref: HECO T-18, page 19, line 14; MECO-1812 - (System Loss Analysis).**

Please provide a complete copy of the referenced "System Loss Analysis" and underlying workpapers for test year energy and demand loss rates, indicating where the results of such studies are reflected in MECO-WP-1802 and where the results are used in specific rate design proposals.

**MECO Response:**

The requested information was inadvertently excluded from MECO-WP-1802, but is attached to this response, and the electronic files are also included. The Service Voltage Adjustments at proposed rates on CA-IR-192, page 3, apply to Schedules G, J, and P at all three MECO divisions.

<p align="center"><b>Table 1.1</b> <b>Allocation of MECO System Losses</b> <b>For the Test Year of 2007</b></p>						
	Energy		Max Demand		Min Demand	
	(MWH)	Percent	(MW)	Percent	(MW)	Percent
<b>A.</b> Total Generation	1,316,401		213.80		86.50	
IPP Generation	215,427		26.25		22.25	
MECO Gross Generation	1,100,974		187.55		64.25	
MECO Auxiliary Loss	20,451		3.91		1.71	
<b>B.</b> Delivered to MECO Generator Step-Up	1,080,523	83.71%	183.64	87.95%	62.54	74.01%
IPP Generation	215,427	16.69%	26.25	12.57%	22.25	26.33%
MECO Generator Step-Up Loss	5,091	0.39%	1.08	0.52%	0.29	0.34%
<b>C.</b> Delivered to 69/23 kV Transmission	1,290,859	100.00%	208.80	100.00%	84.50	100.00%
69 kV Transmission Loss	14,954	1.16%	3.18	1.52%	0.43	0.51%
23 kV Transmission Loss	8,600	0.67%	1.83	0.88%	0.38	0.45%
<b>D.</b> Delivered to 69/23 kV Distribution Substations	1,267,304	98.18%	203.79	97.60%	83.68	99.04%
Transformation Loss	6,859	0.53%	1.46	0.70%	0.73	0.86%
<b>E.</b> Delivered to Distribution Lines	1,260,445	97.64%	202.33	96.90%	82.96	98.18%
Distribution Line Loss	32,704	2.53%	6.96	3.33%	2.66	3.15%
<b>F.</b> Delivered to Distribution/Secondary Transformation	1,227,741	95.11%	195.37	93.57%	80.29	95.03%
Transformation Loss	7,184	0.56%	1.53	0.73%	1.43	1.69%
<b>G.</b> Delivered to Secondary	1,220,557	94.55%	193.84	92.84%	78.87	93.34%
Secondary Loss	6,508	0.50%	1.38	0.66%	0.33	0.39%
<b>H. Delivered to Meter</b>	1,214,049	94.05%	192.46	92.17%	78.53	92.94%
Company Use	1,709	0.13%	0.30	0.14%	0.10	0.12%
Sales	1,212,340	93.92%	192.16	92.03%	78.43	92.83%
Total Losses	76,810	5.95%	16.34	7.83%	5.96	7.06%
<b>System Net Total</b>	1,290,859		208.80		84.50	

MAUI ELECTRIC COMPANY, LTD.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
DETERMINATION OF PROPOSED SERVICE VOLTAGE ADJUSTMENTS

	Energy (MWH)	Loss (MWH)	Loss as % of Level J (%)	Cum % Loss from Level J (%)	Serv Volt Adj at Proposed Rates (G, J, P) (%)	Serv Volt Adj at Present Rates (%)
A. MECO Net Generation	1,080,523					
B. Delivered to MECO GSU Tsf. MECO GSU Tsf Losses	1,080,523	5,091				
C. MECO Gen Delivered To 69/23 kV IPP Gen Injection	1,075,432 215,427					
Delivered To Transmission Trans Losses	1,290,859	23,555				
(TP) F. Delivered To 69/23 kV Dist. Subs Dist Tsf Losses	1,267,304	6,859	0.56%	4.38%	4.4%	4.9%
(TS) G. Delivered To Dist Lines Dist Lines Losses	1,260,445	32,704	2.69%	3.82%	3.8%	3.9%
(DP) H. Delivered To Dist/Sec Tsf. Sec Tsf Losses	1,227,741	7,184	0.59%	1.13%	1.1%	2.0%
(DS) I. Delivered To Sec Sec Losses	1,220,557	6,508	0.54%	0.54%	0.5%	1.0%
(SEC) J. Delivered To Meter	1,214,049					

Source:

2007 Estimated Demand & Energy Losses

CA-IR-193

**Ref: HECO T-18, page 16 - (Low Income Program).**

According to the testimony, "The Company plans to develop a program to address the issues of low income residential ratepayers, and plans to introduce its proposals subsequently in this case." Please provide the following information:

- a. Describe all work performed by the Company to-date to evaluate the issues of low income residential ratepayers, indicating alternative proposals that were considered and identifying any studies, reports, analyses, projections and other documents that were produced.
- b. Provide copies of the documents referenced in your response to part (a) of this information request.
- c. State in as much detail as possible and quantify each element of the Company's planned low income program(s).

**MECO Response:**

- a. The Company has performed work to evaluate issues of low income residential ratepayers and alternative proposals as part of its Demand-Side Management ("DSM") program planning in its Integrated Resource Planning process, Docket No. 04-0077, MECO IRP Plan. A Residential Low Income Assistance program was included in the DSM resource portfolio discussed in Chapter 6: Demand-Side Resources of the MECO IRP Plan.
- b. See MECO's IRP Plan, Chapter 6: Demand-Side Resources and Appendix L of Docket No. 04-0077.
- c. The Company plans to propose the same provision for LIHEAP customers in Schedule R that HELCO proposed in its 2006 test year rate case: Schedule R customers who receive bill credits under LIHEAP will pay non-fuel energy charges at the proposed first tier rate only (they are waived from the proposed 2<sup>nd</sup> and 3<sup>rd</sup> tier non-fuel energy charges). The Parties to the HECO 2007 test year rate case have also agreed to include this LIHEAP provision in the Schedule R rate design in the rate case settlement agreement. MECO will formally present the LIHEAP provision for Schedule R in either rebuttal testimony or in settlement discussions.

CA-IR-194

**Ref: T-18, page 24, line 18 - (Schedule H Closure).**

According to the witness, "MECO would like to close Schedule H to new customers in order to plan for a transition for the existing Schedule H customers." Please provide the following:

- a. Explain whether MECO believes that it has submitted any cost support for allowing existing Schedule H customers to remain on that rate.
- b. If your response to part (a) of this information request is affirmative, please provide complete copies of all studies, reports, and other information indicative of cost justification for continued service under Schedule H.
- c. If your response to part (a) of this information request is negative, please explain whether closing the rate is expected to be effective in migrating Schedule H customers onto other rates schedules, indicating the expected future date when the rate might be discontinued.
- d. Please explain whether MECO would support Schedule H rate or tariff changes that might induce customers now on Schedule H to elect to migrate to Schedules G or J.
- e. What would be the estimated current monthly bill impact upon a Schedule H customer with average usage characteristics if Schedule H were withdrawn and the customer was billed on either Schedule G or Schedule J at currently effective rates?

**MECO Response:**

- a. MECO is not planning to develop a cost justification for Schedule H customers.
- b. See the response to part a. above.
- c. The proposed closure of Schedule H to new customers will help customers prepare for a transition to other rate schedules in the future. The Company plans to propose the discontinuation of Schedule H in the next MECO general rate case filing.
- d. MECO would need to review any proposed Schedule H rate or tariff changes to assess whether they would have the intended impact of encouraging existing Schedule H customers to migrate to Schedule G or Schedule J, and to ensure that the estimated revenue impact of such migration is considered in the total rate design.
- e. Information is provided in MECO-1819, MECO-1820, and MECO-1821 to compare bill impacts for Schedule H and Schedule G customers with kWh usages of 5,000 kWh per

month or less. Comparison of a customer's Schedule H bill with its bill on Schedule J requires analysis of the Schedule H load and re-calculation of the billing load under Schedule J. Such bill analyses have only been performed on individual case bases and we are unable to generalize about the Schedule H versus Schedule J bill comparisons.



CA-IR-195

**Ref: T-18, page 9, Distribution Facilities – Customer Component.**

According to Mr. Young's testimony, "The distribution lines and transformers are assigned to demand and customer components, since the size and costs of these facilities are dependent not only on the customers' load, but also on the type and location of the customers." Please provide complete copies of MECO distribution engineering manuals, instructions, guidelines and all other documents that are used to define how MECO distribution facilities are sized and designed to meet the types, locations and anticipated load levels of customers under alternative circumstances.

**MECO Response:**

The requested documents include the following:

National Electric Code (NEC)  
National Electric Safety Code (NESC)  
General Order 6  
General Order 7  
General Order 10  
HECO Overhead Engineering Standards  
HECO Underground Engineering Standards  
Customer Engineering (C.E.) Planners Guide  
HECO Engineering Standard Practice Manual  
Joint Pole Agreement  
HECO Electric Pole Installation Manual (ESIM)  
HECO Pole Loading Calculation Excel spreadsheet  
Lineman and Cableman Handbook

The requested information is voluminous and is available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information.

CA-IR-196    **Ref: T-18, page 9, Distribution Facilities – Customer Component.**

Please provide the following information:

- a. Detailed calculations associated with the minimum system and/or zero intercept studies that were relied upon to determine the portion of distribution facilities classified as customer-related in the Company's cost of service study.
- b. Describe the minimum sized distribution pole that was used by MECO to determine its customer component weighting for the distribution poles account.
- c. Explain whether any poles shorter than the assumed minimum sized pose have been installed by MECO since 1982.
- d. Provide a complete statement of MECO's policy with regard to distribution pole placement and sizing, under representative frequently encountered typical conditions of pole initial installation or replacement.
- e. If the response to part (c) of this information request is affirmative, please provide the dates and numbers of such pole installations.
- f. What approximate percentage of pole installations in a representative year are replacements of existing poles, rather than new pole line construction.
- g. Describe the assumed minimum sized facility for OH primary and OH secondary conductor.
- h. Provide a complete statement of MECO's policy with regard to distribution overhead primary conductor placement and sizing, under representative frequently encountered typical conditions of overhead pole line initial installation or replacement.
- i. Provide a complete statement of MECO's policy with regard to distribution overhead secondary conductor placement and sizing, under representative frequently encountered typical conditions of overhead pole line initial installation or replacement.
- j. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by the specified minimum system primary overhead conductor?
- k. Approximately how many individual residential customers within separately metered apartments, using average test year demand levels of single phase service, could be served by the specified primary overhead conductor?
- l. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by the specified minimum system secondary overhead conductor?
- m. Approximately how many individual residential customers within separately metered apartments, using average test year demand levels of single phase service, could be served by the specified secondary overhead conductor?
- n. Describe the minimum sized underground primary and secondary conductor that was used by MECO to determine its customer component weighting for the underground conductors.
- o. Provide a complete statement of MECO's policy with regard to underground primary and secondary conductor placement and sizing, under representative frequently encountered typical conditions of pole initial installation or replacement.
- p. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by the specified minimum-sized underground primary conductor?

- q. Approximately how many individual residential customers within separately metered apartments, using average test year demand levels of single phase service, could be served by the specified minimum-sized underground primary conductor?
- r. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by the specified minimum-sized underground secondary underground secondary conductor?
- s. Approximately how many individual residential customers within separately metered apartments, using average test year demand levels of single phase service, could be served by the specified minimum-sized underground secondary conductor?
- t. Describe the minimum sized overhead and padmount distribution transformer that was used by MECO to determine its customer component weighting for the underground conductors.
- u. Provide a complete statement of MECO's policy with regard to distribution transformer placement and sizing, under representative frequently encountered typical conditions of initial installation or replacement.
- v. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by the specified minimum-sized overhead transformer?
- w. Approximately how many individual residential customers within single family detached homes, using average test year demand levels of single phase service, could be served by a the specified minimum-sized padmount transformer?
- x. Has MECO installed any transformers smaller than the specified minimum-sized overhead or padmount transformers since 1984?
- y. If your response to part (x) of this information request is affirmative, please provide detailed information by vintage year of installed units and costs for each category of installations (overhead, padmount, 1/3 phase).
- z. If your response to part (x) of this information request is affirmative, please explain why smaller sized transformers were not used as part of the Company's assumed minimum sized system.

MECO Response:

- a. The Company used the minimum system and zero-intercept calculations that were used in MECO's last rate case, Docket No. 97-0346, due to other commitments in other matters before the Commission. However, this cost allocation method has been approved in past MECO, HELCO, and HECO rate cases, and the Company believes that these allocation factors are reasonable to use in this case. The supporting calculations are provided in pages 7 to 88 of this response.

- b. The minimum size pole used in this analysis is 30 feet for Maui and Lanai divisions and 25 feet for Molokai division.
- c. There have been none.
- d. See MECO's response to CA-IR-195.
- e. Not applicable.
- f. We are unable to provide an answer. The plant accounting system does track pole installations, but does not distinguish between new pole placements and replacement of existing poles.
- g. The assumed minimum sized facilities are 245 amps for overhead primary conductor and 100 amps for overhead secondary conductor, respectively.
- h. See MECO's response to CA-IR-195.
- i. See MECO's response to CA-IR-195.
- j. Approximately 299 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system primary overhead conductor. Approximately 384 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system primary overhead conductor. Approximately 499 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system primary overhead conductor.
- k. Approximately 299 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system primary overhead conductor. Approximately 384 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system primary overhead conductor. Approximately 499 Molokai residential

customers with average test year demand of 3.0 kW can be served by the minimum system primary overhead conductor.

- l. Approximately 4 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system secondary overhead conductor. Approximately 6 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system secondary overhead conductor. Approximately 8 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system secondary overhead conductor.
- m. Approximately 4 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system secondary overhead conductor. Approximately 6 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system secondary overhead conductor. Approximately 8 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system secondary overhead conductor.
- n. The assumed minimum sized facilities are 118 amps for underground primary conductor and 111 amps for underground secondary conductor, respectively.
- o. See MECO's response to CA-IR-195.
- p. Approximately 140 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system underground primary conductor. Approximately 180 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system underground primary conductor. Approximately 234 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system underground primary conductor.

- q. Approximately 140 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system underground primary conductor. Approximately 180 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system underground primary conductor. Approximately 234 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system underground primary conductor.
- r. Approximately 4 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system underground secondary conductor. Approximately 5 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system underground secondary conductor. Approximately 7 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system underground secondary conductor.
- s. Approximately 4 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system underground secondary conductor. Approximately 5 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system underground secondary conductor. Approximately 7 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system underground secondary conductor.
- t. The assumed minimum sized facilities are 10 kva for overhead transformer and 25 kva for padmount transformer, respectively.
- u. See MECO's response to CA-IR-195.
- v. Approximately 1 Maui residential customer with average test year demand of 5.0 kW can be served by the minimum system overhead transformer. Approximately 2 Lanai residential

customers with average test year demand of 3.9 kW can be served by the minimum system overhead transformer. Approximately 2 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system overhead transformer.

- w. Approximately 4 Maui residential customers with average test year demand of 5.0 kW can be served by the minimum system padmount transformer. Approximately 5 Lanai residential customers with average test year demand of 3.9 kW can be served by the minimum system padmount transformer. Approximately 7 Molokai residential customers with average test year demand of 3.0 kW can be served by the minimum system padmount transformer.
- x. No, based on the available data.
- y. Not applicable.
- z. Not applicable.

Pages 7-88 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the documents. An electronic copy of the requested information is being provided.



CA-IR-197

**Ref: MECO-1813, Marginal Cost of Service Study.**

Please provide a complete copy of the Company's most recently performed Marginal Cost Study, including supporting workpapers for all marginal cost study results reflected in MECO-1813, including electronic excel files for all such data.

**MECO Response:**

A copy of MECO's Marginal Cost Study is attached. Pages 24-148 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the documents. Electronic copies of the requested information are being provided.

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0386, TEST-YEAR 2007  
MARGINAL COST STUDY

MARGINAL ENERGY COSTS BY TIME-OF-USE RATING PERIOD

YEAR	Priority Peak (A)	Mid-Peak (B)	Off-Peak (C)	TOTAL (D)
Transmission Voltage Service (¢/kWh)				
2007	19.78	19.62	18.47	19.15
2008	15.22	14.95	14.14	14.64
2009	14.63	14.32	13.61	14.05
2010	14.18	13.76	13.08	13.53
2011	13.67	13.44	12.83	13.21
Primary Voltage Service (¢/kWh)				
2007	21.06	20.77	19.18	20.12
2008	16.19	15.81	14.68	15.37
2009	15.55	15.13	14.12	14.75
2010	15.07	14.53	13.58	14.19
2011	14.52	14.19	13.31	13.85
Secondary Voltage Service (¢/kWh)				
2007	21.29	20.97	19.31	20.30
2008	16.37	15.96	14.78	15.50
2009	15.72	15.28	14.21	14.87
2010	15.23	14.67	13.66	14.30
2011	14.67	14.32	13.39	13.96
Average	16.65	16.24	15.07	15.79

ECALLYRS

**MAUI ELECTRIC COMPANY, LIMITED**  
**MARGINAL ENERGY COSTS**  
**2007 Update**  
**2007 - 2011**

YEAR	<u>Priority Peak</u>	<u>Shoulder Peak</u>	<u>Off-Peak</u>
	(Cents per kWh)		
	(1)	(2)	(3)
	Transmission		
2007	19.78	19.62	18.47
2008	15.22	14.95	14.14
2009	14.63	14.32	13.61
2010	14.18	13.76	13.08
2011	13.67	13.44	12.83
	Primary		
2007	21.06	20.77	19.18
2008	16.19	15.81	14.68
2009	15.55	15.13	14.12
2010	15.07	14.53	13.58
2011	14.52	14.19	13.31
	Secondary		
2007	21.29	20.97	19.31
2008	16.37	15.96	14.78
2009	15.72	15.28	14.21
2010	15.23	14.67	13.66
2011	14.67	14.32	13.39

SOURCE: See worksheets for annual energy costs (Energy2007 -- Energy2011).

ENERGY2007

**MAUI ELECTRIC COMPANY, LIMITED**  
**ESTIMATED MARGINAL ENERGY COSTS BY COSTING PERIOD FOR 2007**  
**2007 Update**

	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	(1)	(2)	(3)	(4)
(1) Marginal Running Cost (2007 cents/kWh) Excluding Variable O&M Expenses	14.52549	14.51027	13.84598	14.23529
(2) Variable O&M Expenses (2007 cents/kWh)	2.41318	2.41318	2.41318	2.41318
(3) A&G Loading for Variable O&M (2) x 43.31%	1.045	1.045	1.045	1.045
(4) Incremental Cost of Fuel Stock (2007 cents/kWh)	1.268798	1.268798	1.268798	1.268798
(5) Cash Working Capital [ {(2)+(3)} x -1.17% ] + [ (1) x 4.32% ]	0.586704	0.586047	0.557359	0.574172
(6) Revenue Requirements for Working Capital [ (4)+(5) ] x 13.09%	0.242885	0.242799	0.239044	0.241245
(7) Marginal Energy Cost (2007 cents/kWh) (1) + (2) + (3) + (6)	18.226556	18.211250	17.543205	17.934716
Marginal Energy Loss Factor for Service to:				
(8) Transmission	1.08543	1.07756	1.05265	1.06795
(9) Primary	1.15538	1.14024	1.09345	1.12199
(10) Secondary	1.16813	1.15159	1.10068	1.13169
Marginal Energy Cost Including Losses to:				
(11) Transmission (7) x (8) (2007 cents/kWh)	19.78	19.62	18.47	19.15
(12) Primary (7) x (9) (2007 cents/kWh)	21.06	20.77	19.18	20.12
(13) Secondary (7) x (10) (2007 cents/kWh)	21.29	20.97	19.31	20.30

Source : Line (1): See workpaper "Maui TY2007 2007-11LdRC\_MGC\_HrLoad for CA-IR-197.xls"  
Line (2): See workpaper "Simple Cycle GE LM2500 Unit Information Form"  
Line (3): See worksheet for "A&G Loading Factor".  
Line (4): See worksheet for "Electric Fuel Inventory Cost" (FUELSTOCK).  
Line (5): See worksheet for "Derivation of Estimated Cash Working Capital Requirements".  
Line (6): See worksheet for "Derivation of Revenue Requirement for Working Capital Factor".  
Line (8)-(10): Marginal Energy Loss Study. See attached Excel printout.

ENERGY2008

**MAUI ELECTRIC COMPANY, LIMITED**  
**ESTIMATED MARGINAL ENERGY COSTS BY COSTING PERIOD FOR 2008**  
**2007 Update**

	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	(1)	(2)	(3)	(4)
(1) Marginal Running Cost (2007 cents/kWh) Excluding Variable O&M Expenses	10.36390	10.21239	9.76612	10.04452
(2) Variable O&M Expenses (2007 cents/kWh)	2.41318	2.41318	2.41318	2.41318
(3) A&G Loading for Variable O&M (2) x 43.31%	1.045	1.045	1.045	1.045
(4) Incremental Cost of Fuel Stock (2007 cents/kWh)	1.268798	1.268798	1.268798	1.268798
(5) Cash Working Capital [[(2)+(3)] x -1.17%] + [(1) x 4.32%]	0.406981	0.400438	0.381165	0.393188
(6) Revenue Requirements for Working Capital [(4)+(5)] x 13.09%	0.219359	0.218503	0.215980	0.217554
(7) Marginal Energy Cost (2007 cents/kWh) (1) + (2) + (3) + (6)	14.041437	13.889069	13.440280	13.720252
Marginal Energy Loss Factor for Service to:				
(8) Transmission	1.08420	1.07641	1.05215	1.06707
(9) Primary	1.15301	1.13804	1.09254	1.12033
(10) Secondary	1.16554	1.14918	1.09969	1.12989
Marginal Energy Cost Including Losses to:				
(11) Transmission (7) x (8) (2007 cents/kWh)	15.22	14.95	14.14	14.64
(12) Primary (7) x (9) (2007 cents/kWh)	16.19	15.81	14.68	15.37
(13) Secondary (7) x (10) (2007 cents/kWh)	16.37	15.96	14.78	15.50

Source : Line (1): See workpaper "Maui TY2007 2007-11LdRC\_MGC\_HrLoad for CA-IR-197.xls"  
Line (2): See workpaper "Simple Cycle GE LM2500 Unit Information Form"  
Line (3): See worksheet for "A&G Loading Factor".  
Line (4): See worksheet for "Electric Fuel Inventory Cost".  
Line (5): See worksheet for "Derivation of Estimated Cash Working Capital Requirements".  
Line (6): See worksheet for "Derivation of Revenue Requirement for Working Capital Factor".  
Line (8)-(10): Marginal Energy Loss Study. See attached Excel printout.

ENERGY2009

**MAUI ELECTRIC COMPANY, LIMITED**  
**ESTIMATED MARGINAL ENERGY COSTS BY COSTING PERIOD FOR 2009**  
**2007 Update**

	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	(1)	(2)	(3)	(4)
(1) Marginal Running Cost (2007 cents/kWh) Excluding Variable O&M Expenses	9.83543	9.64042	9.26750	9.50827
(2) Variable O&M Expenses (2007 cents/kWh)	2.41318	2.41318	2.41318	2.41318
(3) A&G Loading for Variable O&M (2) x 43.31%	1.045	1.045	1.045	1.045
(4) Incremental Cost of Fuel Stock (2007 cents/kWh)	1.268798	1.268798	1.268798	1.268798
(5) Cash Working Capital {[(2)+(3)] x -1.17%} + {(1) x 4.32%}	0.384158	0.375736	0.359632	0.370030
(6) Revenue Requirements for Working Capital [(4)+(5)] x 13.09%	0.216372	0.215270	0.213161	0.214523
(7) Marginal Energy Cost (2007 cents/kWh) (1) + (2) + (3) + (6)	13.509979	13.313866	12.938846	13.180978
Marginal Energy Loss Factor for Service to:				
(8) Transmission	1.08318	1.07553	1.05154	1.06629
(9) Primary	1.15104	1.13637	1.09141	1.11886
(10) Secondary	1.16339	1.14736	1.09847	1.12829
Marginal Energy Cost Including Losses to:				
(11) Transmission (7) x (8) (2007 cents/kWh)	14.63	14.32	13.61	14.05
(12) Primary (7) x (9) (2007 cents/kWh)	15.55	15.13	14.12	14.75
(13) Secondary (7) x (10) (2007 cents/kWh)	15.72	15.28	14.21	14.87

Source : Line (1): See workpaper "Maui TY2007 2007-11LdRC\_MGC\_HrLoad for CA-IR-197.xls"  
Line (2): See workpaper "Simple Cycle GE LM2500 Unit Information Form"  
Line (3): See worksheet for "A&G Loading Factor".  
Line (4): See worksheet for "Electric Fuel Inventory Cost".  
Line (5): See worksheet for "Derivation of Estimated Cash Working Capital Requirements".  
Line (6): See worksheet for "Derivation of Revenue Requirement for Working Capital Factor".  
Line (8)-(10): Marginal Energy Loss Study. See attached Excel printout.

ENERGY2010

**MAUI ELECTRIC COMPANY, LIMITED**  
**ESTIMATED MARGINAL ENERGY COSTS BY COSTING PERIOD FOR 2010**  
**2007 Update**

	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	(1)	(2)	(3)	(4)
(1) Marginal Running Cost (2007 cents/kWh) Excluding Variable O&M Expenses	9.43062	9.13453	8.77949	9.02188
(2) Variable O&M Expenses (2007 cents/kWh)	2.41318	2.41318	2.41318	2.41318
(3) A&G Loading for Variable O&M (2) x 43.31%	1.045	1.045	1.045	1.045
(4) Incremental Cost of Fuel Stock (2007 cents/kWh)	1.268798	1.268798	1.268798	1.268798
(5) Cash Working Capital [[(2)+(3)] x -1.17%] + [(1) x 4.32%]	0.366676	0.353889	0.338556	0.349024
(6) Revenue Requirements for Working Capital [(4)+(5)] x 13.09%	0.214084	0.212410	0.210403	0.211773
(7) Marginal Energy Cost (2007 cents/kWh) (1) + (2) + (3) + (6)	13.102886	12.805118	12.448074	12.691834
Marginal Energy Loss Factor for Service to:				
(8) Transmission	1.08254	1.07485	1.05107	1.06571
(9) Primary	1.14981	1.13507	1.09055	1.11776
(10) Secondary	1.16204	1.14594	1.09753	1.12709
Marginal Energy Cost Including Losses to:				
(11) Transmission (7) x (8) (2007 cents/kWh)	14.18	13.76	13.08	13.53
(12) Primary (7) x (9) (2007 cents/kWh)	15.07	14.53	13.58	14.19
(13) Secondary (7) x (10) (2007 cents/kWh)	15.23	14.67	13.66	14.30

Source : Line (1): See workpaper "Maui TY2007 2007-11LdRC\_MGC\_HrLoad for CA-IR-197.xls"  
Line (2): See workpaper "Simple Cycle GE LM2500 Unit Information Form"  
Line (3): See worksheet for "A&G Loading Factor".  
Line (4): See worksheet for "Electric Fuel Inventory Cost".  
Line (5): See worksheet for "Derivation of Estimated Cash Working Capital Requirements".  
Line (6): See worksheet for "Derivation of Revenue Requirement for Working Capital Factor".  
Line (8)-(10): Marginal Energy Loss Study. See attached Excel printout.

ENERGY2011

**MAUI ELECTRIC COMPANY, LIMITED**  
**ESTIMATED MARGINAL ENERGY COSTS BY COSTING PERIOD FOR 2011**  
**2007 Update**

	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	(1)	(2)	(3)	(4)
(1) Marginal Running Cost (2007 cents/kWh) Excluding Variable O&M Expenses	8.96962	8.84440	8.54369	8.73398
(2) Variable O&M Expenses (2007 cents/kWh)	2.41318	2.41318	2.41318	2.41318
(3) A&G Loading for Variable O&M (2) x 43.31%	1.045	1.045	1.045	1.045
(4) Incremental Cost of Fuel Stock (2007 cents/kWh)	1.268798	1.268798	1.268798	1.268798
(5) Cash Working Capital [[ (2)+(3) ] x -1.17% ] + [ (1) x 4.32% ]	0.346767	0.341359	0.328373	0.336590
(6) Revenue Requirements for Working Capital [(4)+(5)] x 13.09%	0.211478	0.210770	0.209070	0.210145
(7) Marginal Energy Cost (2007 cents/kWh) (1) + (2) + (3) + (6)	12.639280	12.513354	12.210942	12.402301
Marginal Energy Loss Factor for Service to:				
(8) Transmission	1.08185	1.07419	1.05064	1.06514
(9) Primary	1.14848	1.13382	1.08974	1.11669
(10) Secondary	1.16059	1.14458	1.09666	1.12592
Marginal Energy Cost Including Losses to:				
(11) Transmission (7) x (8) (2007 cents/kWh)	13.67	13.44	12.83	13.21
(12) Primary (7) x (9) (2007 cents/kWh)	14.52	14.19	13.31	13.85
(13) Secondary (7) x (10) (2007 cents/kWh)	14.67	14.32	13.39	13.96

Source : Line (1): See workpaper "Maui TY2007 2007-11LdRC\_MGC\_HrLoad for CA-IR-197.xls"  
Line (2): See workpaper "Simple Cycle GE LM2500 Unit Information Form"  
Line (3): See worksheet for "A&G Loading Factor".  
Line (4): See worksheet for "Electric Fuel Inventory Cost".  
Line (5): See worksheet for "Derivation of Estimated Cash Working Capital Requirements".  
Line (6): See worksheet for "Derivation of Revenue Requirement for Working Capital Factor".  
Line (8)-(10): Marginal Energy Loss Study. See attached Excel printout.



RUNCOST

MAUI ELECTRIC COMPANY, LIMITED  
MARGINAL RUNNING COSTS 1997-2001  
2007 Update

<u>Year</u>	<u>Priority Pk</u>	<u>Shoulder Pk</u>	<u>Off-Peak</u>	<u>Annual</u>	<u>CPI - U</u>	<u>Inflation</u>	<u>Deflator <sup>1</sup></u>	<u>Priority Peak</u>	<u>Shoulder</u>	<u>Off-Peak</u>	<u>Annual</u>
	-----	-----	-----	-----	(Honolulu)		(2007=100)	-----	-----	-----	-----
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		(¢/KWH)					(5)/(5)*	(1)/(7)x100	(2)/(7)x100	(3)/(7)x100	(4)/(7)x100
2007	14.52549	14.51027	13.84598	14.23529	208.7	3.51%	100.0	14.52549	14.51027	13.84598	14.23529
2008	10.72767	10.57084	10.10891	10.39708	216.0	3.51%	103.5	10.36390	10.21239	9.76612	10.04452
2009	10.53799	10.32905	9.92950	10.18747	223.6	3.51%	107.1	9.83543	9.64042	9.26750	9.50827
2010	10.45893	10.13055	9.73680	10.00562	231.4	3.51%	110.9	9.43062	9.13453	8.77949	9.02188
2011	10.29782	10.15406	9.80882	10.02728	239.6	3.52%	114.8	8.96962	8.84440	8.54369	8.73398

NOTE: Costing periods are defined as follows:

Priority Peak: 5:01 p.m. to 9:00 p.m., weekdays.  
Shoulder Peak: 7:01 a.m. to 5:00 p.m., weekdays,  
7:01 a.m. to 9:00 p.m., weekends.  
Off-Peak: 9:01 p.m. to 7:00 a.m., daily.

<sup>1</sup>: (5)\* = (5) of 2007.

Source : Col. (1)-(4): Based on production simulation data for 2007-2011. (See attachments)  
Col. (5): 2007 figure is derived by escalating 2006 Honolulu CPI-U (201.6) by rate of Inflation (Col.(6)).  
Col. (6): See inflation rate worksheet.

*FUELSTOCK*

**MAUI ELECTRIC COMPANY, LIMITED  
COST OF FUEL STOCK PER KWH  
2007 Update**

	<b>2007</b>
(1) Value of 30 Day Supply (2007 Dollar)	\$13,668,751
(2) Gross Annual Generation (MWH)	1,291,513
(3) Purchased Power	214,214
(4) Net MECO Generation (MWH) (2)-(3)	1,077,299
(5) Value of 30 Day Supply per kWh (1)/(4) (Cents/kWh)	1.268798

SOURCE: Line (1): See MECO-WP-404, Pgs. 2, 4.

Line (2), (3): See MECO-WP-404 Pg. 2

**MAUI ELECTRIC COMPANY, LIMITED**  
**LOADING FACTORS FOR ADMINISTRATIVE AND**  
**GENERAL EXPENSES AND SOCIAL SECURITY AND UNEMPLOYMENT TAXES**  
**AND GENERAL PLANT**  
**1997**

Loading Factors For Administrative And General Expenses And Social Security And Unemployment Taxes		Estimate
-----		-----
(1)	Applicable to Nonplant-Related Expenses <sup>1</sup>	43.31%
(2)	Applicable to Plant-Related Expenses <sup>2</sup>	0.54%
General Plant		
-----		
(3)	Loading Factor For General Plant <sup>3</sup>	4.79%

<sup>1</sup> The result of a regression analysis of the following accounts

920 Administrative and General Salaries  
 921 Office Supplies and Expenses  
 922 Administrative Expenses Transferred-Cr  
 925 Injuries and Damages  
 926 Employee Pensions and Benefits  
 929 Duplicate Charges-Cr  
 930.1 General Advertising Expenses  
 930.2 Miscellaneous General Expenses  
 Social Security and Unemployment Insurance Taxes

and Total Operation and Maintenance Expenses Excluding Fuel,  
 Purchased Power and Administrative and General Expenses, all in  
 constant dollars.

<sup>2</sup> The result of a regression analysis of the following accounts

923 Outside Services Employed  
 924 Property Insurance  
 927 Franchise Requirements  
 928 Regulatory Commission Expenses  
 931 Rents  
 932 Maintenance of General Plant

and additions to Total Gross Plant, all in constant dollars.

<sup>3</sup> The result of a regression analysis of additions to general plant  
 and additions to total electric plant in service less general plant,  
 all in constant dollars.

Source: Based on MECO Loading Factor Regression Analysis.  
 See attached workpapers (SAS printouts).

**MAUI ELECTRIC COMPANY, LIMITED**  
**DERIVATION OF ESTIMATED**  
**CASH WORKING CAPITAL REQUIREMENTS**  
**2007**

Expense/Revenue	Lead/ Lag Days	2007 Expense	Lead/Lag Day Dollars	Weighted Lead/ Lag Days	Used in Study
----- (Thousand Dollars) -----					
	(a)	(b)	(a) x (b) (c)	(d)	(e)
(1) Revenues	36.0	\$333,075	\$11,990,700	<u>36.0</u>	
(2) Fuel	16.0	\$166,525	\$2,664,400		
(3) Purchased Power	41.0	\$33,982	\$1,393,262		
(4) Total Fuel and Purchased Power		\$200,507	\$4,057,662		
(5) Weighted Average (4c)/(4b)				<u>20.2</u>	
(6) Net Lag Days (1)-(4)				<u>15.8</u>	
(7) Cash Working Capital Factor for Fuel and Purchased Power (6)/365					4.32%
(8) Payroll	12.0	\$16,451	\$197,412		
(9) Health and Life Benefits	28.0	\$0	\$0		
(10) Other O & M	28.0	\$28,809	\$806,652		
Taxes Other Than Income Taxes					
(11) Property	28.0	\$0	\$0		
(12) Excise	28.0	\$0	\$0		
(13) FICA	28.0	\$0	\$0		
(14) Other Non-Payroll	28.0	\$0	\$0		
(15) Revenue Taxes	68.0	\$29,665	\$2,017,220		
Income Taxes					
(16) Current FIT	40.0	\$0	\$0		
(17) Current SIT	40.0	\$10,305	\$412,200		
(18) Total		\$85,230	\$3,433,484		
(19) Weighted Average (18c)/(18b)				<u>40.3</u>	
(20) Net Lag Days (19)-(1)				<u>(4.3)</u>	
(21) Cash Working Capital Factor	Marginal Cost Inputs, See Requested Numbers, Long-Term General				
for Other Costs (20)/365					-1.17%

Col. (a): Lead/Lag Days Study.

Col. (b): 1995 FERC Form 1, pp. 262, 300, 320, 321, 323 and 355.

Line (1): FERC Form 1, pp. 300, line 27 less line 26.

Line (2): FERC Form 1, pp. 320-321, Acct. #501 and 547.

Line (3): FERC Form 1, pp. 321, Acct. #555.

Line (8): FERC Form 1, pp. 355, Line #96, Column (b).

Line (9): FERC Form 1, pp. 323, Account #925 and 926.

Line (10): FERC Form 1, pp. 323, Total O&amp;M Expenses - Line (2), (3), (8) and (9).

Line (11)-(17): FERC Form 1, pp. 262, Column (d).

**MAUI ELECTRIC COMPANY, LIMITED**  
**DERIVATION OF REVENUE REQUIREMENT**  
**FOR WORKING CAPITAL FACTOR**  
**2007**

## I. Derivation of Overall Return:

		Incremental Capital Structure		Incremental Cost of Capital		Weighted Cost of Capital
		-----		-----		-----
(1)	Short-Term Debt	1.27 %	x	5.00 %	=	0.0635 %
(2)	Long-Term Debt	40.15 %	x	6.11 %	=	2.4532 %
(3)	Preferred	3.69 %	x	7.70 %	=	0.2842 %
(4)	Common Equity	54.89 %	x	11.25 %	=	6.1751 %
(5)	Overall Return = Composite Incremental Cost of Capital =					8.9760 %

## II. Derivation of Income Tax Component:

	Income	Tax Rate		
	Tax	= -----	x	(Cost of Preferred + Cost of Common Equity)
	Component	1 - Tax Rate		
		38.91%		
(6)		= -----	x	(0.28% + 6.18%) =
		61.09%		4.11 %

## III. Derivation of Revenue Requirement for Working Capital Factor:

(7)	Overall Return	=	8.98 %
(8)	Income Tax Component	=	4.11 %
			-----
(9)	Revenue Requirement for Working Capital Factor	=	13.09 %

Source: Revenue Requirements Worksheet

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
SUMMARY OF SYSTEM LOSSES

	Demand			Energy		
	Max Dmd (MW)	% Losses	Volt Level % Losses	Load Losses (GWH)	% Losses	Volt Level Losses
	(A)	(B)	(C)	(D)	(E)	(F)
MECO Gross Generation	187.55			1,100.97		
MECO Auxiliary Loss	3.91	2.13%		20.45	1.89%	
Delivered to HECO Generator Step UP	183.64			1,080.52		
MECO Generator Step UP Loss	1.08	0.59%		5.09	0.47%	
MECO Generation Delivered to 138 kV	182.56			1,075.43		
IPP Generation Delivered to 138 kV	26.25			215.43		
Delivered to 138 kV Transmission	208.81			1,290.86		
138 kV Transmission Loss	0.00	0.00%		0.00	0.00%	
Delivered to 69/23 kV Transmission	208.81			1,290.86		
69 kV Transformation Loss	3.18	1.55%		14.95	1.17%	
Delivered to 23 kV Subtransmission	205.63			1,275.91		
Feed-back from Others	0.00			0.00		
23 kV Subtransmission Loss	1.83	0.90%		8.60	0.68%	
Delivered to 69/23 kV Distribution Substation	203.80			1,267.31		
Transformation Loss	1.46	0.72%		6.86	0.54%	
Transmission Losses			6.02%			4.83%
Delivered to Distribution Lines	202.34			1,260.45		
Distribution Lines Loss	6.96	3.56%		32.70	2.66%	
Delivered to Distribution/Secondary Transformation	195.38			1,227.74		
Distribution/Secondary Transformation Loss	1.53	0.79%		7.18	0.59%	
Primary Losses			4.38%			8.26%
Delivered to Secondary	193.85			1,220.56		
Secondary Loss	1.38	0.72%		6.51	0.54%	
Secondary Losses			0.72%			8.84%
Delivered to Customer	192.47			1,214.050		

Source:

Col. (A) - HECO System Loss Analysis. Prepared by T&D Planning Dept.

Cols. (B), (D) - Calculated as loss divided by amount delivered to next level.

Cols. (C), (E) - Cumulative losses from the level above to this level. Calculated as  $\{[(1+\text{Col. B}) \times (1+\text{Col. B}) \times \dots] - 1\}$

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
CALCULATION OF MARGINAL ENERGY LOSS FACTORS BY VOLTAGE LEVEL  
2007

		Priority Peak Period			Mid-Peak Period			Off-Peak Period			Annual		
		Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)
L1	Losses	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%
L2	Hourly Load (MW)	182.3	182	182	166.8	167	167	115.9	116	116	147.4	147	147
L3	2007 System Peak Load (MW)	224.0	224	224	224	224	224	224	224	224	224	224	224
L4	Marginal Energy Loss Factor	1.1681	1.1554	1.0854	1.1516	1.1402	1.0776	1.1007	1.0935	1.0526	1.1317	1.1220	1.0680

Source:

L1 - See wp Summary of System Losses.

L2-L3 : Sample values.

L4 =  $1 + \frac{[(2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load})]}{(1 - (2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}))}$

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
CALCULATION OF MARGINAL ENERGY LOSS FACTORS BY VOLTAGE LEVEL  
2008

		Priority Peak Period			Mid-Peak Period			Off-Peak Period			Annual		
		Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)
L1	Losses	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%
L2	Hourly Load (MW)	186.0	186	186	170.0	170	170	118.7	119	119	150.5	151	151
L3	2007 System Peak Load (MW)	231.5	232	232	232	232	232	232	232	232	232	232	232
L4	Marginal Energy Loss Factor	1.1655	1.1530	1.0842	1.1492	1.1380	1.0764	1.0997	1.0925	1.0522	1.1299	1.1203	1.0671

Source:

L1 - See wp Summary of System Losses.

L2-L3 : Sample values.

$L4 = 1 + \{[(2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}) / (1 - (2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}))]\}$



MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
CALCULATION OF MARGINAL ENERGY LOSS FACTORS BY VOLTAGE LEVEL  
2009

		Priority Peak Period			Mid-Peak Period			Off-Peak Period			Annual		
		Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)
L1	Losses	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%
L2	Hourly Load (MW)	190.0	190	190	173.8	174	174	121.3	121	121	153.8	154	154
L3	2007 System Peak Load (MW)	239.2	239	239	239	239	239	239	239	239	239	239	239
L4	Marginal Energy Loss Factor	1.1634	1.1510	1.0832	1.1474	1.1364	1.0755	1.0985	1.0914	1.0515	1.1283	1.1189	1.0663

Source:

L1 - See wp Summary of System Losses.

L2-L3 : Sample values.

$L4 = 1 + \{[(2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}) / (1 - (2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}))]\}$

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
CALCULATION OF MARGINAL ENERGY LOSS FACTORS BY VOLTAGE LEVEL  
2010

		Priority Peak Period			Mid-Peak Period			Off-Peak Period			Annual		
		Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)
L1	Losses	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%
L2	Hourly Load (MW)	195.6	196	196	178.6	179	179	124.6	125	125	158.2	158	158
L3	2007 System Peak Load (MW)	248.0	248	248	248	248	248	248	248	248	248	248	248
L4	Marginal Energy Loss Factor	1.1620	1.1498	1.0825	1.1459	1.1351	1.0749	1.0975	1.0905	1.0511	1.1271	1.1178	1.0657

Source:

L1 - See wp Summary of System Losses.

L2-L3 : Sample values.

$L4 = 1 + [(2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}) / (1 - (2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load}))]$

MAUI ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0387, TEST-YEAR 2007  
MARGINAL COST STUDY  
CALCULATION OF MARGINAL ENERGY LOSS FACTORS BY VOLTAGE LEVEL  
2011

		Priority Peak Period			Mid-Peak Period			Off-Peak Period			Annual		
		Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)	Sec Voltage (A)	Pri Voltage (B)	Trans Volt (C)
L1	Losses	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%	8.84%	8.26%	4.83%
L2	Hourly Load (MW)	199.0	199	199	181.7	182	182	126.8	127	127	160.9	161	161
L3	2007 System Peak Load (MW)	254.3	254	254	254	254	254	254	254	254	254	254	254
L4	Marginal Energy Loss Factor	1.1606	1.1485	1.0819	1.1446	1.1338	1.0742	1.0967	1.0897	1.0506	1.1259	1.1167	1.0651

Source:

L1 - See wp Summary of System Losses.

L2-L3: Sample values.

$L4 = 1 + \{[(2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load})] / [1 - (2 \times \text{Losses} \times \text{Period Load as \% of System Peak Load})]\}$

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0386, TEST-YEAR 2007  
MARGINAL COST STUDY

Honolulu-CPI

YEAR	INFLATION	CPI BASE = 2003	Hon CPI BASE= 1982-1984
1995	2.2%	91.1	168.1
1996	2.0%	92.5	170.7
1997	1.0%	93.2	171.9
1998	0.0%	93.0	171.5
1999	1.0%	93.9	173.3
2000	2.0%	95.6	176.3
2001	1.0%	96.7	178.4
2002	1.0%	97.7	180.3
2003	2.0%	100.0	184.5
2004	3.0%	103.0	190.0
2005	3.0%	106.1	195.7
2006	3.0%	109.3	201.6 ✓
2007	3.0%	112.5	207.6
2008	3.0%	115.9	213.8
2009	3.0%	119.3	220.2
2010	3.0%	122.9	226.8
2011	3.0%	126.6	233.6

File: INFLATION-US

**HAWAIIAN ELECTRIC COMPANY, INC.  
MARGINAL COST STUDY UPDATE  
TEST YEAR 1997**

Year	GDP Deflator 1987=100	Inflation
1994		
1995	1.287	
1996		2.58%
1997		2.58%
1998		2.58%
1999		2.58%
2000	1.462	2.58%
2001		3.34%
2002		3.34%
2003		3.34%
2004		3.34%
2005	1.723	3.34%
2006		3.51%
2007		3.51% ✓
2008		3.51% ✓
2009		3.51% ✓
2010	2.047	3.51% ✓
2011		3.52% ✓
2012		3.52%
2013		3.52%
2014		3.52%
2015	2.433	3.52%

Source: / Energy Information Administration: Annual Energy Outlook, 1996  
Table C-20, Page 232

Notes: 1996-2000 Inflation calculated:  $((\text{Year 2000 GDP deflator} / \text{Year 1995 GDP deflator})^{(1/5)} - 1)$   
2001-2005 Inflation calculated:  $((\text{Year 2005 GDP deflator} / \text{Year 2001 GDP deflator})^{(1/5)} - 1)$

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2006-0386, TEST-YEAR 2007  
MARGINAL COST STUDY  
DEVELOPMENT OF ANNUAL LABOR COST

CA-IR-197  
DOCKET NO. 2006-0387  
PAGE 22 OF 148

YEAR	WAGE	TY 2005
	INCREASE Wtd % Incr	Wage Index (2003 = 100)
1973	7.00%	
1974	7.00%	
1975	7.00%	30.66
1976	6.00%	32.50
1977	5.60%	34.32
1978	6.00%	36.38
1979	6.30%	38.67
1980	8.20%	41.84
1981	8.70%	45.48
1982	7.00%	48.66
1983	7.20%	52.17
1984	8.20%	56.44
1985	3.00%	58.14
1986	3.40%	60.11
1987	3.30%	62.10
1988	2.40%	63.59
1989	2.80%	65.37
1990	3.00%	67.33
1991	2.50%	69.01
1992	3.51%	71.43
1993	4.25%	74.47
1994	4.25%	77.64
1995	4.25%	80.93
1996	4.04%	84.20
1997	3.00%	86.73
1998	3.00%	89.33
1999	2.00%	91.12
2000	2.04%	92.98
2001	2.29%	95.11
2002	2.50%	97.48
2003	2.58%	100.00

Table 1  
Simple Cycle GE LM2500 Unit Information Form

Utility: <b>MECO</b> Unit Type: <b>Simple Cycle GE LM2500</b> Fuel Type: <b>No. 2 Fuel Oil</b>		<b>UNIT INFORMATION FORM</b> <b>MECO IRP-3</b>		Date: <b>November 22, 2005</b> By: <b>Black &amp; Veatch</b> Supersedes: <b>November 21, 2005</b>																																																																										
<b>Unit Ratings:</b> Normal Top Load <table border="1" style="display: inline-table;"><tr><td>Gross</td><td>21.53</td></tr><tr><td>Net</td><td>21.18</td></tr></table> Minimum <table border="1" style="display: inline-table;"><tr><td>Gross</td><td>5.41</td></tr><tr><td>Net</td><td>5.22</td></tr></table>		Gross	21.53	Net	21.18	Gross	5.41	Net	5.22	<b>Capacity and Heat Rate Data:</b> <table border="1" style="display: inline-table; font-size: small;"> <tr> <th>#</th> <th>Comp</th> <th>Gross</th> <th>Net</th> <th>Net Plant</th> <th>Quick Load</th> </tr> <tr> <th>CTGs</th> <th>Inlet</th> <th>Load</th> <th>Load</th> <th>Heat Rate</th> <th>Pickup</th> </tr> <tr> <td>1</td> <td>86/70</td> <td>21.53</td> <td>21.18</td> <td>10,994</td> <td>-</td> </tr> <tr> <td>1</td> <td>86/70</td> <td>5.41</td> <td>5.22</td> <td>17,102</td> <td>16.12</td> </tr> </table>		#	Comp	Gross	Net	Net Plant	Quick Load	CTGs	Inlet	Load	Load	Heat Rate	Pickup	1	86/70	21.53	21.18	10,994	-	1	86/70	5.41	5.22	17,102	16.12	<b>General Site/Technology Characteristics:</b> <table border="1" style="display: inline-table; font-size: small;"> <tr><td>Fuel Delivery</td><td>Truck</td></tr> <tr><td>Fuel Storage Onsite</td><td>30</td></tr> <tr><td>Water Supply Source</td><td>Brackish Wells</td></tr> <tr><td>CTG Inlet Air Cooling</td><td>No</td></tr> <tr><td>Cycle Cooling</td><td>NA</td></tr> <tr><td>Waste Water Disposal</td><td>Reinjection</td></tr> <tr><td>Solid Waste Disposal</td><td>On-Island</td></tr> <tr><td>Minimum Land Requirement</td><td>acres 5.0</td></tr> </table>		Fuel Delivery	Truck	Fuel Storage Onsite	30	Water Supply Source	Brackish Wells	CTG Inlet Air Cooling	No	Cycle Cooling	NA	Waste Water Disposal	Reinjection	Solid Waste Disposal	On-Island	Minimum Land Requirement	acres 5.0																									
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Pages 24-148 are voluminous and available for inspection at HECO's Regulatory Affairs  
Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii.  
Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the documents.  
Electronic copies of the requested information are being provided.



CA-IR-198

**Ref: T-19, page 9, lines 5 – 13.**

The referenced testimony indicates that the fuel expenses from the CHP unit at Manele Bay will be included in the DG component of MECO's Lanai Division ECAC calculation, if it is approved by the Commission.

- a. When does MECO expect to receive approval from the Commission of the Manele Bay CHP unit?
- b. Please provide capacity, energy and cost information for the Manele Bay CHP project.
- c. Please explain how the Manele Bay CHP unit costs will be calculated and included in the Lanai Division ECAC.

**MECO Response:**

- a. MECO hopes to receive Commission approval of the Manele Bay CHP project as soon as possible – within the next one to two months – to allow timely installation of the unit in 2008. The timing of Commission approval of the Manele Bay CHP unit is in large part dependent on whether MECO and the Consumer Advocate can reach a stipulation on the issues of the docket. MECO filed its application for Commission approval of the project on July 14, 2006. The Consumer Advocate submitted information requests and supplemental information requests to MECO, and MECO provided its responses. The Consumer Advocate filed its statement of position on the project on January 18, 2007, and MECO filed its response to the Consumer Advocate's statement of position on February 15, 2007. To address the concerns expressed by the Consumer Advocate in its statement of position, on April 5, 2007, MECO supplemented its response with further economic analysis showing that the proposed MECO CHP system was preferable from the Lanai ratepayer perspective. On August 31, 2007, MECO forwarded a draft stipulation letter to the Consumer Advocate for its review.

- b. The Manele Bay CHP system consists of a single nominal 819 kW diesel engine generator and a 115-ton absorption chiller. The peak CHP system net capacity is 884 kW including the generating unit output and absorption chiller load off-set, less auxiliary loads. For additional CHP system information, please see MECO's Application filed in Docket No. 2006-0186, pages 6-7. For Manele Bay CHP system energy production information, please see MECO's responses to CA-SIR-9 and CA-SIR-10, filed in Docket No. 2006-0186. For Manele Bay CHP system capital, operations and maintenance cost information, please see MECO's responses to CA-IR-1, CA-IR-2, CA-SIR-10, and CA-SIR-12, filed in Docket No. 2006-0186.
- c. Please see MECO's response to CA-IR-11, filed in Docket No. 2006-0186. See also MECO's Response to the Consumer Advocate's Statement of Position, pages 14-16, filed February 15, 2007 in Docket No. 2006-0186.

CA-IR-199

**Ref: IRP-3 Filing in Docket No. 04-0077, pages 7-43 (DG Assessment Study).**

According to the Company's IRP filing, "MECO is currently undertaking a DG Assessment Study that will characterize the amount of DG reasonably possible for the timeframe between 2007 and 2014." Please provide a complete copy of this study when it becomes available.

**MECO Response:**

As stated in the Company's Stipulation Regarding Hearing and Commission Approval, filed on September 21, 2007 in Docket No. 04-0077, "...MECO plans to finalize its distributed generation study by early October 2007 and will file the study with Commission, and a copy will be provided to the Consumer Advocate..."

CA-IR-200

**Ref: Responses to CA-IR-40 and CA-IR-42 (Forecast Documentation).**

Please provide the complete copies of all available documentation associated with the current forecast cycle that is underway now, including but not limited to the most current equivalent version of each form of attachment that was produced in development of the July 2006 Forecast (and supplied in response to CA-IR-40). It is recognized that this information may be preliminary and subject to change upon finalization, as noted in CA-IR-42, part (a).

**MECO Response:**

See the following available documents.

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2	Draft Minutes from the Forecast Planning Committee Meeting	1-4
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The requested information for detailed documentation in support of the July 2007 Forecast is voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information.

Attachments 1-16 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect these documents. Electronic versions of the attachments are being provided.

Attachments 2, 5, 6, 7, 8, 10, 11, 12, 14 and 15 contain confidential information and are being provided subject to Protective Order No. 23379, dated April 23, 2007.

CA-IR-201

**Ref: Response to CA-IR-47 (Renaissance Wailea Beach Resort).**

According to the response, "The expected demolition of the Renaissance Wailea Beach Resort did not materialize at the end of 2006, as expected. This delayed demolition has inflated 2007 year to-date sales by 1.7 GWH over the forecast." Please provide the following information:

- a. Maui hotel sector actual sales by account by month and by rate schedule for each month of 2006 and 2007, to-date.
- b. A breakdown of projected Maui hotel sector sales by account and by month for test year 2007.
- c. Explain known reasons for any significant differences between projected (part (b)) and actual (part (a)) sales for individual accounts.

**MECO Response:**

- a. See response to CA-IR-200 Attachment 15.
- b. See response to CA-IR-40 Attachment 19 for the projected Maui hotel sales sector by account for the test year 2007. The Schedule P forecast is done on an annual basis for each account and therefore, sales projections by month are not available.
- c. As mentioned in part b, the forecast for each account is done on an annual basis and it is therefore difficult to identify specific reasons for monthly and/or year-to-date variations. Nonetheless, much of the positive variance can be explained by the continuation of the Renaissance operation which adds 2.1 GWh as of June year-to-date. In addition, Maui County is experiencing drought conditions causing an increase in water pumping loads.

CA-IR-202

**Ref: MECO-203, page 7 (Maui Division Schedule P).**

Please provide the following information:

- a. Actual monthly sales volumes for each Maui Schedule P customer for 2006 and each available month of 2007, to date.
- b. Test year projected monthly sales volumes for each of the 121 forecasted Maui Schedule P customers.
- c. An explanation of known causes for each individually significant difference between actual (part (a)) and projected (part (b)) sales to individual customers in the test year.

**MECO Response:**

- a. See response to CA-IR-200 Attachment 15.
- b. See response to CA-IR-40 Attachment 19 for the projected Maui hotel sales sector by account for the test year 2007. The Schedule P forecast is done on an annual basis for each account and therefore, sales projections by month are not available.
- c. As mentioned in part b, the forecast for each account is done on an annual basis and it is therefore difficult to identify specific reasons for monthly and/or year-to-date variations. Nonetheless, much of the positive variance to date (+2.3 GWh) can be explained by the continuation of the Renaissance operation which adds 2.1 GWh as of June year-to-date. On a forward looking basis, MECO expects much of the positive variance to be offset by the closure of the Ritz Carlton as of July 2<sup>nd</sup>, (which was not known at the time the test year sales projections were made) as it undergoes renovation before reopening in mid-December.

CA-IR-203

**Ref: MECO-204, page 7 (Lanai Division Schedule P).**

Please provide the following information:

- a. Actual monthly sales volumes for each Lanai Schedule P customer for 2006 and each available month of 2007, to-date.
- b. Test year projected monthly sales volumes for each of the 3 forecasted Lanai Schedule P customers.
- c. An explanation of known causes for each individually significant difference between actual (part (a)) and projected (part (b)) sales to individual customers in the test year.

**MECO Response:**

- a. See response to CA-IR-200 Attachment 8.
- b. See response to CA-IR-40 Attachment 13 for the projected Molokai sales by account for the test year 2007. The Schedule P forecast is done on an annual basis for each account and therefore, sales projections by month are not available.

- c. As mentioned in part b, the forecast for each account is done on an annual basis and it is therefore difficult to identify specific reasons for monthly and/or year-to-date variations.

The County of Maui is experiencing drought conditions and as such, the pumping loads are higher than forecasted. This is slightly offset by the new chiller load at the Lodge at Koele, which became operational at the end of February 2007, and is billed under its own Schedule J account. Originally, the chiller was going to be part of the Lodge's Schedule P account.

As of June year-to-date, the variance between the forecast and actual sales for Schedule P is -0.2%.



CA-IR-204

**Ref: MECO-205, page 7 (Molokai Division Schedule P).**

Please provide the following information:

- a. Actual monthly sales volumes for each Molokai Schedule P customer for 2006 and each available month of 2007, to-date.
- b. Test year projected monthly sales volumes for each of the 14 forecasted Molokai Schedule P customers.
- c. An explanation of known causes for each individually significant difference between actual (part (a)) and projected (part (b)) sales to individual customers in the test year.

**MECO Response:**

- a. See response to CA-IR-200 Attachment 12.
- b. See response to CA-IR-40 Attachment 7 for the projected Molokai sales by account for the test year 2007. The Schedule P forecast are done on an annual basis for each account and therefore, sales projections by month are not available.
- c. As mentioned in part b, the forecast for each account is done on an annual basis and it is therefore difficult to identify specific reasons for monthly and/or year-to-date variations. Schedule P sales as well as the Molokai system in general is driven by the amount of rain the island receives. The County of Maui is experiencing drought conditions and as such, the pumping loads are higher than forecasted. As of June year-to-date, the variance between the forecast and actual sales for Schedule P is +2.0%.

CA-IR-205

**Ref: MECO-206; Response to CA-IR-44 (CHP Sales Impacts).**

Please provide the following information:

- a. Please state the assumptions and provide the underlying calculations supporting the originally filed Maui CHP forecast adjustments in MECO-206.
- b. Please state the revised assumptions and provide the underlying calculations supporting the revised Maui CHP forecast adjustments in CA-IR-44, Attachment 1.
- c. Provide documentation associated with the customer's expressed "plans" and explain why changes are anticipated "by the third quarter of this year".

**MECO Response:**

- a. Refer to Section 7.6.4.1 MECO IRP CHP Forecasts, in MECO's IRP-3 Report, filed on April 30, 2007 in Docket No. 04-0077 which was also provided in this docket as part of the response to CA-IR-52.
- b. See response to part a.
- c. The customer expressed their plans to operate an emergency stand-by generator as a CHP unit, verbally. Documentation is not available.

CA-IR-206    **Ref: T-3, page 5 (Rider Customers).**

Please explain whether or not MECO intends to update the rate case input values to reflect changes in rider participation for the test period and, if so, provide supporting calculations and documentation for each such change at this time so the CA has an opportunity to review and respond to same.

MECO Response:

MECO intends to update the rate case input values for the test period based on the addition of two Maui Division Schedule J, Rider T customers who signed contracts at the end of 2006. The two Rider customers will be reflected in MECO's revised revenue estimate in rebuttal testimony. Supporting calculations for the revenue adjustments at present rates for Rider customers T32 and T33 are attached to this response as pages 2-3. An electronic file of those calculations is also included.

MAUI ELECTRIC COMPANY, LTD. - MAUI DIVISION  
SCHEDULE J - GENERAL SERVICE DEMAND  
DOCKET NO. 2006-0387 TEST-YEAR 2007

ESTIMATES OF RIDER T REVENUE ADJUSTMENT  
AT PRESENT RATES

T32	PRESENT RATES			
	SCHEDULE J		RIDER T	
	BILLING UNITS	REVENUES (\$)	BILLING UNITS	REVENUES (\$)
<u>BILLING LOAD PER MO.:</u>				
ON-PEAK KW			34.2	
OFF-PEAK KW			40.4	
BILLING KW	40.4		34.2	
ON-PEAK KWH			214	
OFF-PEAK KWH			2683	
TOTAL KWH	2897		2897	
EXCESS OFF-PEAK KW			6.2	
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW	2897	360	2897	360
201 - 400 KWH/KW	0	0	0	0
> 400 KWH/KW	0	0	0	0
SUBTOTAL	2897	360	2897	360
ON-PEAK ENERGY SURCH			214	4
OFF-PEAK ENERGY CREDIT			2683	(80)
SUBTOTAL			2897	-76
<u>DEMAND CHARGE:</u>				
BILLING KW	40.4	232	34.2	197
EXCESS OFF-PEAK DEMAND			6.2	0
SUBTOTAL		232		197
CUSTOMER CHARGE		50		50
TOD METER CHARGE				10
FUEL OIL ADJUST	2897	404	2897	404
TEMP RATE DECR	2897	0	2897	0
SUBTOTAL		454		464
TOTAL REV. PER MONTH		1,046		945
TOTAL REV. PER YEAR (\$1000)		12.6		11.3
RIDER T ADJ. (\$1000/YR)				(1.3)

MAUI ELECTRIC COMPANY, LTD. - MAUI DIVISION  
SCHEDULE J - GENERAL SERVICE DEMAND  
DOCKET NO. 2006-0387 TEST-YEAR 2007

ESTIMATES OF RIDER T REVENUE ADJUSTMENT  
AT PRESENT RATES

T33	PRESENT RATES			
	SCHEDULE J		RIDER T	
	BILLING UNITS	REVENUES (\$)	BILLING UNITS	REVENUES (\$)
<u>BILLING LOAD PER MO.:</u>				
ON-PEAK KW			37.9	
OFF-PEAK KW			40.8	
BILLING KW	40.8		37.9	
ON-PEAK KWH			251	
OFF-PEAK KWH			91	
TOTAL KWH	342		342	
EXCESS OFF-PEAK KW			2.9	
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW	342	42	342	42
201 - 400 KWH/KW	0	0	0	0
> 400 KWH/KW	0	0	0	0
SUBTOTAL	342	42	342	42
ON-PEAK ENERGY SURCH			251	5
OFF-PEAK ENERGY CREDIT			91	(3)
SUBTOTAL			342	2
<u>DEMAND CHARGE:</u>				
BILLING KW	40.8	235	37.9	218
EXCESS OFF-PEAK DEMAND			2.9	0
SUBTOTAL		235		218
CUSTOMER CHARGE		50		50
TOD METER CHARGE				10
FUEL OIL ADJUST	342	48	342	48
TEMP RATE DECR	342	0	342	0
SUBTOTAL		98		108
TOTAL REV. PER MONTH		375		370
TOTAL REV. PER YEAR (\$1000)		4.5		4.4
RIDER T ADJ. (\$1000/YR)				(0.1)

CA-IR-207

**Ref: MECO-WP-402, Response to CA-IR-54.**

The response to CA-IR-54 indicates that the supplier mix of fuel delivered to MECO is given in MECO-WP-402, page 1. Please provide a copy of confidential workpaper MECO-WP-402, pages 1 through 3.

**MECO Response:**

The information requested is attached as pages 2-4.

**Confidential Information  
Deleted Pursuant To  
Protective Order No. 23379**

CA-IR-207  
DOCKET NO. 2006-0387  
PAGES 2-4 OF 4

Pages 2-4 contain confidential information and are being provided subject to  
Protective Order No. 23379, dated April 23, 2007.

CA-IR-208

**Ref: MECO-WP-404, page 13.**

MECO-WP-404, page 13 contains the Plant Summary input to the production simulation.

- a. Please identify the types of data represented by the columns labeled X31, X32, X33, X34, and X35
- b. Please explain and provide supporting documentation for the data listed under the columns labeled X31, X32, X33, X34, and X35.

**MECO Response:**

- a. The data represented within MECO-WP-404, page 13 are the emission cost data for NO<sub>x</sub>, SO<sub>x</sub>, CO<sub>2</sub>, ROG (Reactive Organic Gases) and other emissions, respectively, in dollars per pound for each station (Kahului, Maalaea). This data is used to adjust unit commitment/dispatch priorities. According to P Plus, the P-Month vendor:

The emissions dispatch logic is used to simulate system operations where generation from some thermal stations may be penalized for generating high pollutions. The user can assign a cost to each pollutant such as NO<sub>x</sub>, SO<sub>x</sub>, CO<sub>x</sub>, ROG and others. The cost of pollution is added to the cost of fuel to determine the economic commitment/dispatch priorities. By adjusting the pollutant cost, the user can simulate different degrees of emission penalties to reduce the system pollutions in order to comply with the system monthly/weekly and yearly emission limits.

- b. The data under columns X31, X32, X33, X34, and X35 should be revised to show zero (0.00) emission costs since the dispatch of the generating units is not constrained by emission limits. Although non-zero values were used in the production simulation for some of the emissions (X31 (NO<sub>x</sub>) = 0.0; X32 (SO<sub>x</sub>) = 0.022125; X33 (CO<sub>x</sub>) = 0.022125; X34 (ROG) = 0.022125; X35 (others) = 0.022125), they did not affect the results of the production



simulation. This is because both the Maalaea and Kahului plants were assigned the same values and so they did not affect the relative commitment/dispatch orders. In other words, the result of the dispatch in the rate case production simulation is the same as if each emission cost was 0.0.

CA-IR-209

**Ref: MECO-WP-404, page 10.**

MECO-WP-404, page 10 indicates that the production simulation was modeled using the Monte Carlo technique. Please provide the number of Monte Carlo iterations that were used in the production simulation.

**MECO Response:**

For the Test Year production simulations, 100 Monte Carlo iterations were used.

CA-IR-210

**Ref: MECO-WP-404, pages 18 – 19.**

MECO-WP-404, pages 18 – 19 contains the Thermal Performance Summary input to the Company's direct Testimony production simulation. This summary indicates that the Company modeled each generating unit using 4 capacity states.

- a. Please explain the significance and purpose of modeling 4 capacity states.
- b. Please explain how capacity states 2 and 3 were determined, including all calculations and supporting documentation.

**MECO Response:**

- a. The four capacity states are used in conjunction with the A-B-C coefficients of the heat rate I/O curve to calculate the incremental heat rate for four operating segments. Attached are selected pages of training material from P Plus Corporation, reproduced with written permission. The high-level functional description on page 30 provides context, and page 31 provides a hypothetical example to illustrate the results calculated by P-MONTH. The example illustrates how each of the four capacity states will have differing incremental heat rates.
- b. Capacity states 2 and 3 were approximated by dividing each unit's operating range into three similar-sized segments. This results in capacity state 2 being the minimum rating plus approximately 1/3 the operating range; and capacity state 3 being the minimum rating plus approximately 2/3 the operating range.

**USERS TRAINING**  
  
**on**  
  
**P-MONTH**  
  
**Production Simulation Program**  
  
**for**  
  
**Hawaiian Electric Company (HECO)**

This Manual is the property of P Plus Corporation (PPC)  
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by

P Plus Corporation  
20370 Town Center Lane, Suite 208  
Cupertino, California 95014  
September 2000



## THERMAL STATIONS

- Fossil steam, nuclear, purchases, IPP, CC, CT, diesel, solar and wind power

### Input Data:

- Up to 4 operating capacity states/segments
- Incremental heat rate at each capacity state and an average heat rate for the first capacity state, or heat rate I/O curve in polynomial (up to 4th order)



Example:

A 180 MW Gas-fired Steam Unit with heat rate I/O curve defined as:

$$\text{Fuel Input (MBtu/hr)} = 150. + 8. X + 0.006 X^2$$

Where X = operating level in MW

Minimum capacity	=	50 MW
2nd capacity state	=	100 MW
3rd capacity state	=	150 MW
Maximum capacity	=	180 MW

1st capacity segment:	0 - 50 MW
2nd capacity segment:	50-100 MW
3rd capacity segment:	100-150 MW
4th capacity segment:	150-180 MW

$$\text{Incremental Heat Rate (,000 Btu/kWh)} = 8.+0.012*X$$

Where X = operating level in MW

Av. heat rate at minimum capacity	=	11300	Btu/kWh
Inc. heat rate at minimum capacity	=	8600	Btu/kWh
Inc. heat rate at 2nd capacity state	=	9200	Btu/kWh
Inc. heat rate at 3rd capacity state	=	9800	Btu/kWh
Inc. heat rate at maximum capacity	=	10160	Btu/kWh



CA-IR-211

**Ref: Response to CA-IR-68, T-4, page 28 lines 17-24, MECO-WP-404, page 19.**

The referenced testimony and the response to CA-IR-68 indicate that each generating unit's maintenance outage rate ("MOR") is allocated using the AUTOMNT algorithm in P-Month and the resulting outage becomes a thermal maintenance outage. MECO-WP-404, page 19 indicates that MECO generating units Kahului 3 and 4 each have a MOR of 0.517%. Please explain why the MOR for Kahului 3 and 4 did not become allocated to a thermal maintenance outage listed on the response to CA-IR-68, page 2.

**MECO Response:**

The maintenance outage rate ("MOR") is calculated as follows:

$$\text{MOR\%} = (\text{weeks of maintenance}/52) \times 100$$

The AUTOMNT algorithm was designed to generate maintenance schedules in multiples of weeks (7, 14, 21 days, etc.); it does not have provisions to schedule maintenance shorter than one week. The AUTOMNT algorithm calculates the weeks of maintenance from the MOR% input in the Thermal Performance Summary (as shown in MECO-WP-404, page 19). The algorithm rounds the weeks of maintenance to the nearest week and then converts the number of weeks into days (as shown in the Thermal Maintenance Summary of CA-IR-68, page 2). Therefore, if the AUTOMNT algorithm calculates the number of weeks to be less than 0.5, then zero weeks of maintenance will be allocated to the corresponding unit. If the unit does not have any weeks of maintenance then it will not be shown in the Thermal Maintenance Summary. Such is the case with the Kahului Units 3 and 4. Both units have a MOR% of 0.517, which calculates to 0.27 weeks of maintenance. When rounded to the nearest week, this converts to zero weeks of maintenance and therefore, is not shown in the Thermal Maintenance Summary.

CA-IR-212

**Ref: MECO IRP-3 Filing in Docket No. 04-0077, pages 7-23 (Waena Station).**

According to the Company's IRP filing, "MECO intends to lease to the non-regulated subsidiary of HECO the portion of the Waena Generating Station lands for the plant, with lease proceeds credited to MECO ratepayers." Please provide the following information:

- a. State all reasons why full inclusion of Waena site investment in PHFFU in this rate case docket is reasonable, given the planned non-regulated use of a portion of the plant site.
- b. How does MECO intend to establish the lease terms and rental rates? Please provide calculations for the anticipated monthly rental amounts.
- c. If the biodiesel plant is to be built "by 2009", at what approximate date does MECO intend to commence the lease term so as to accommodate construction by BlueEarth?
- d. Explain how the "lease proceeds" would be "credited to MECO ratepayers" if the lease commenced between rate case test periods, given that the Waena investment is included within Plant Held for Future Use in the pending rate case filing.
- e. Provide a drawing of the Waena station site plan, indicating the areas intended to be used for each planned generating unit and for the biofuels plant.

**MECO Response:**

- a. Full inclusion of the Waena Generating Station site ("Waena site") in Property Held For Future Use ("PHFFU") in this rate case docket is reasonable, because as stated in MECO T-14, the entire 67 acre land parcel is planned to be used for the proposed Waena Generating Station (aka, Waena Power Plant) anticipated to be placed in-service in the year 2011. The portion of the parcel that is the potential site of the proposed biofuel plant will be used as a buffer area for the power plant.

Purchase of the Waena site was approved by the Commission in 1996 by Decision and Order ("D&O") No. 14674, dated May 10, 1996, in Docket No. 96-0039. Also, the Commission included the Waena site in PHFFU in MECO's last rate case by Amended D&O No. 16922, dated April 6, 1999, in Docket No. 97-0346. Subsequently, in 2000, the buffer area was dedicated for renewable energy use, as a condition of the change in



zoning approved by the County of Maui, such that use of the parcel as a future power plant site requires the buffer area to be dedicated for renewable energy use.

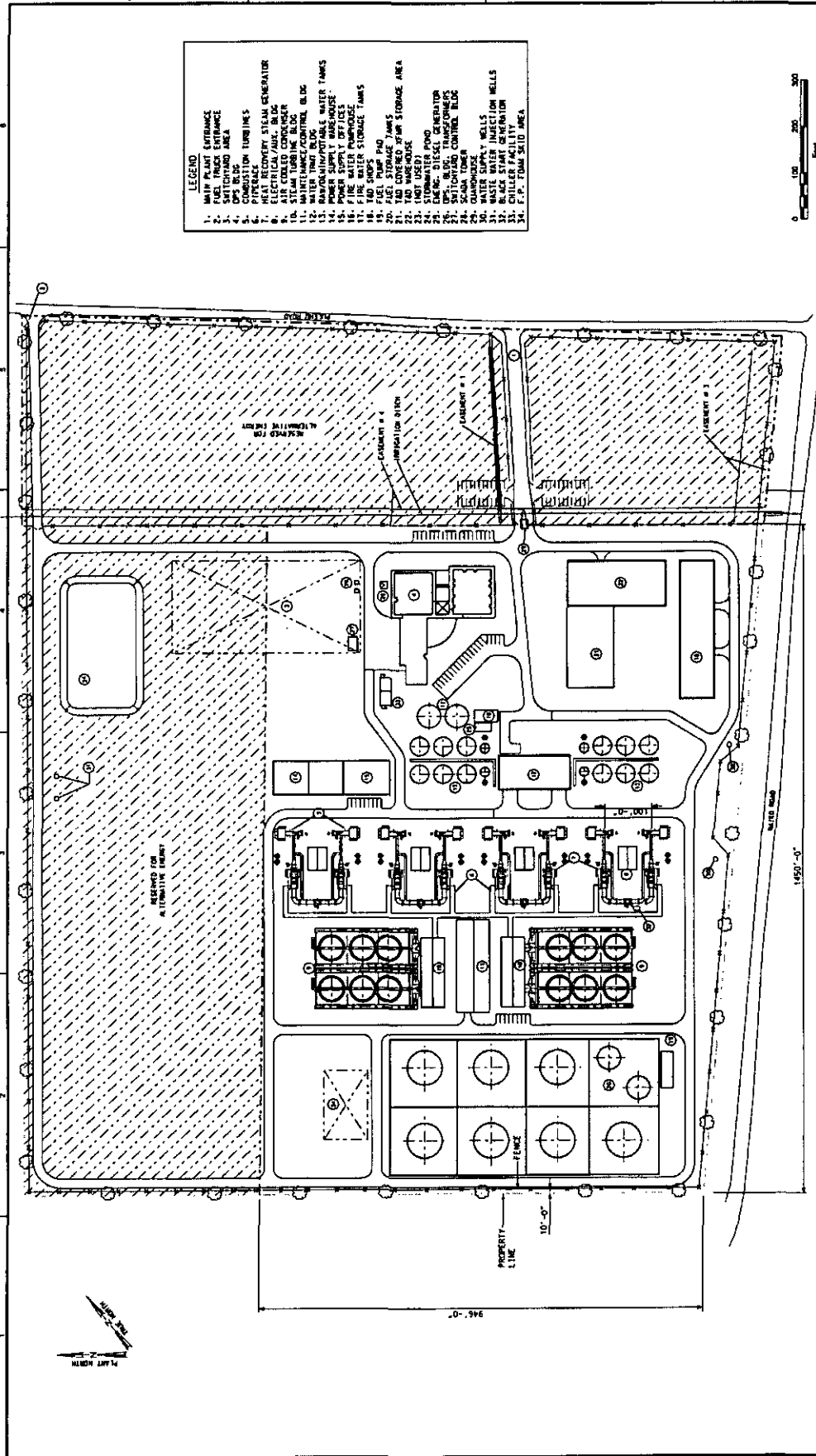
In addition, to the extent that the Company leases to the non-regulated subsidiary of HECO a portion of the Waena site parcel for the production of biofuels, and such lease constitutes a non-regulated use of the Waena site parcel, then any lease proceeds or other revenue derived from that portion of the parcel would appropriately be considered non-utility income. However, as indicated in the Company's IRP filing in Docket No. 04-0077, the Company intends to credit the lease proceeds to the Company's ratepayers, if the land is included in MECO's rate base.

Finally, because the Company's plans identified in the above-referenced IRP proceeding and quoted above are preliminary at this point, and further will be subject to the Commission's future approval in a separate proceeding, the Company believes it is appropriate to continue to include the full costs of the Waena site in rate base as PHFFU for the instant proceeding, and for the Commission to address the ratemaking treatment of the proposed lease or other proposals for use of a portion of the Waena site at the time that the Company submits an application for Commission approval of said proposed lease or other proposals that may require Commission approval.

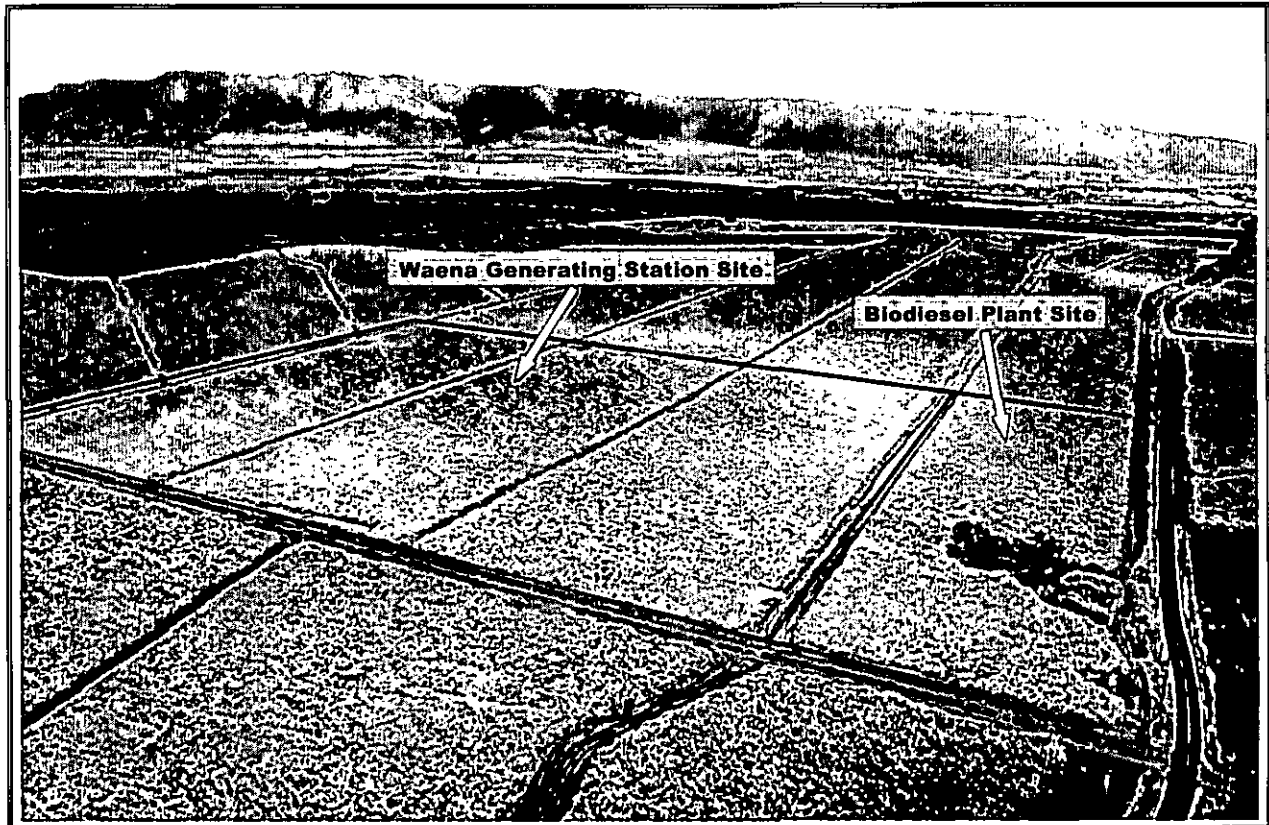
- b. To date, the non-regulated subsidiary of HECO that is expected to lease a portion of the Waena site from the Company has not been formed so lease negotiations have not yet begun. Accordingly, the Company has not determined any proposed lease terms and rental rates, which will be subject to the Commission's review and approval, for the proposed lease of a portion of the Waena site.

- c. The start date of the lease term will be determined when the Company obtains Commission approval for the lease of the Waena site.
- d. The Company anticipates that the ratemaking treatment of the proposed lease transaction will be determined by the Commission as part of a separate proceeding approving the proposed lease transaction.
- e. See Attachment 1.

THIS DOCUMENT, AND THE DEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL. IT IS TO BE USED ONLY FOR THE PROJECT AND FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.



GENERAL INFORMATION										PROJECT INFORMATION										REVISIONS										APPROVALS									
COMPLETE PLANT BUILDOUT PLOT PLAN										MAIN ELECTRIC COMPANY, LIMITED WABSA GENERATING STATION JULY 2006										REV. NO. 31008										DWG. NO. MA-GA-10-01-01									
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## **WAENA GENERATING STATION SITE**

**PULEHU ROAD — MAUI, HAWAII**



Maui Electric Company, Limited

CA-IR-213

**Ref: IRP-3 Filing in Docket No. 04-0077, pages 1-13 (Maalaea Unit 13).**

According to the Company's IRP filing, "MECO plans to implement one or more of the following mitigation measures, as necessary, during this period in order to mitigate the potential impact the reserve capacity shortfall may have on system reliability. Mitigation measures include..." and a list of "measures" are provided. Please provide the following information:

- a. Explain whether and how the Unit Overhaul Schedule was changed in order to "optimize", indicating the impacts upon each overhaul.
- b. Identify and provide cost impacts associated with each of the "Deviation from Standard Maintenance Practice[s]" that was employed.
- c. State whether "Standard" maintenance practices were assumed in development of test year normalized production maintenance expenses.
- d. If your response to part (c) of this information request is negative, please describe and quantify the additional adjustments that would be required to reflect fully normalized "standard" maintenance practices.
- e. Quantify the monthly usage of Hana Standby Generators that has occurred.
- f. Quantify the amounts of additional supplemental power from HC&S that was acquired.
- g. Identify and quantify the estimated MWH associated with each "request for voluntary customer curtailment of demand" that has occurred.

**MECO Response:**

- a. The M13 engine damage in December 2005 resulted in increased running hours on other MECO generators, which required adjustments to some of the overhauls scheduled in 2006. The M11 overhaul was moved up to February 27 from April 10. The M10 overhaul was moved up to October 23 from October 30. The M14 engine re-installation was moved up to February 24 from April 7. The M16 engine removal was moved up to June 2 from June 30. The M16 engine re-installation was moved up to September 22 from November 17. Also, the KPP unit K2 and K3 overhauls were shortened by 2 weeks

and 1 week respectively by performing the overhaul work most essential to the unit's continued availability and deferring some of the non-essential work.

- b. As stated in MECO's IRP-3 Report, deviating from standard maintenance practices was one the mitigation measures that was considered to be implemented. Ultimately, deviation from standard maintenance practices was not one of the mitigation measures implemented.
- c. Standard maintenance practices were assumed in development of test year normalized production maintenance expenses.
- d. N/A
- e. The monthly output of Hana Standby Generators that has occurred from the time M13 went out of service to the time M18 became commercial was as follows:

Month	KWHRS
Dec 05	6,535
Jan 06	963
Feb 06	15,910
Mar 06	19,523
Apr 06	15,021
May 06	125
Jun 06	286
Jul 06	227
Aug 06	14,721
Sep 06	96
Oct 06	9,588

- f. The amount of supplemental power requested from HC&S from the time M13 went out of service to the time M18 became commercial (December 9, 2005 – October 27, 2006) was as follows:

<u>Amount/ Time</u>	<u>Start Date</u>	<u>End Date</u>	<u>Duration</u>
Sup. Sch. Power Req. (4 MW) 17:41-21:41	1/2/06	1/2/06	1 day
Sup. Sch. Power Req. (4 MW) 07:45-21:00	1/3/06	1/3/06	1 day
Sup. Sch. Power Req. (3 MW) 07:00-1:00	1/4/06	1/4/06	1 day
Sup. Sch. Power Req. (2 MW) 08:00-1:00	2/23/06	2/23/06	1 day
Sup. Sch. Power Req. (4 MW) 07:00-1:00	4/4/06	4/5/06	2 days
Sup. Sch. Power Req. (4 MW) 07:00-2:00	4/7/06	4/7/06	1 day
Sup. Sch. Power Req. (3 MW) 08:00-11:00	5/1/06	5/1/06	1 day
Sup. Sch. Power Req. (4 MW) 15:00-21:00	5/19/06	5/19/06	1 day
Sup. Sch. Power Req. (6 MW) 16:00-21:00	7/18/06	7/18/06	1 day
Sup. Sch. Power Req. (6 MW) 9:00-21:00	7/21/06	7/21/06	1 day
Sup. Sch. Power Req. (3 MW) 14:00-17:00	7/22/06	7/22/06	1 day
Sup. Sch. Power Req. (4 MW) 15:00-21:00	7/25/06	7/25/06	1 day
Sup. Sch. Power Req. (4 MW) 14:00-21:00	7/31/06	7/31/06	1 day
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/1/06	8/1/06	1 day
Sup. Sch. Power Req. (4 MW) 11:00-21:00	8/2/06	8/2/06	1 day
Sup. Sch. Power Req. (2 MW) 11:00-13:00	8/3/06	8/4/06	2 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/3/06	8/4/06	2 days
Sup. Sch. Power Req. (2 MW) 11:00-13:00	8/7/06	8/11/06	5 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/7/06	8/11/06	5 days
Sup. Sch. Power Req. (2 MW) 11:00-13:00	8/14/06	8/18/06	5 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/14/06	8/18/06	5 days
Sup. Sch. Power Req. (2 MW) 11:00-13:00	8/21/06	8/25/06	5 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/21/06	8/25/06	5 days
Sup. Sch. Power Req. (4 MW) 9:00-21:00	8/28/06	8/28/06	1 day
Sup. Sch. Power Req. (2 MW) 11:00-13:00	8/29/06	9/1/06	4 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	8/29/06	9/1/06	4 days
Sup. Sch. Power Req. (2 MW) 11:00-13:00	9/4/06	9/5/06	2 days
Sup. Sch. Power Req. (4 MW) 13:00-21:00	9/4/06	9/5/06	2 days
Sup. Sch. Power Req. (4 MW) 15:00-21:00	10/6/06	10/6/06	1 day

- g. During the subject time period (December 9, 2005 – October 27, 2006) there were two requests issued for voluntary customer curtailment of demand (April 3, 2006 and August 28, 2006). It is estimated that each request resulted in a demand reduction of approximately five MWs. Assuming an average curtailment period of two hours, approximately ten MWhRs were conserved per request.

CA-IR-214

**Ref: MECO IRP-3 Filing in Docket No. 04-0077, pages 1-24 (Maalaea Unit 13).**

According to the Company's IRP filing, "MECO projects that Maalaea Unit 13 will be unavailable for service to the system until approximately June or July 2007." Please provide the following:

- a. description of the current status and estimated completion of all work on the unit;
- b. monthly expenditures, by NARUC account, to repair and/or improve the unit; and
- c. total anticipated costs by account to complete all planned work, net of any insurance proceeds that are anticipated.

**MECO Response:**

- a. The Malaea Unit 13 (M-13) was started on July 3, 2007. This unit went into its run-in schedule on July 4, 2007 and was in normal operation on July 10, 2007.
- b. Please refer to Attachment 1 for a summary of the monthly costs incurred in connection with the December 2005 M13 engine damage incident as of June 30, 2007. Costs incurred for repairs have been initially recorded to NARUC Account No. 553. Each month, the portion of the costs which are deemed to be recoverable from the insurers are reclassified to either a liability account, during periods when cumulative costs incurred were less than the sum of the insurance deductible amount plus any advances received from the insurers, or receivable account, during periods when cumulative costs incurred exceeded the sum of the insurance deductible amount plus any advances received from the insurers. The only amounts remaining in Account No. 553 after reclassifying costs expected to be recovered represent costs incurred which insurers have indicated that full recovery may not be forthcoming. As shown on Attachment 1 of this response, through June 30, 2007 the



Company had incurred total costs of \$6,137,600, had reclassified \$6,121,800 of that to a receivable account, and as a result recognized a net expense of \$15,800 in Account No. 553. In addition, as discussed in MECO T-9 by Mr. Lyle Matsunaga, the Company's 2005 recorded expenses for Account No. 924 includes \$750,000 for the insurance deductible amount for this incident. The sum of expenses recognized through June 30, 2007 totaled \$765,800.

- c. Total costs to be incurred, before an anticipated insurance recovery, in connection with the December 2005 M-13 engine damage incident, was estimated at \$7.35 million. Anticipated insurance recoveries were estimated at approximately \$4.15 million as of June 30, 2007. The remaining costs anticipated to be incurred as a result of this incident that is still in question amounts to \$2.15 million. A total of \$1.05 million is not expected to be recovered which comprised of \$750,000 for the insurance deductible and \$300,000 for foundation repairs.

Maui Electric Company, Limited

**Unit M13 Engine Failure**  
**Monthly Expenditures Summary (as of June 30, 2007)**

(In dollars)

		A	B	C = A - B	D	E = C + D
<u>Year</u>	<u>Month</u>	<u>Total Costs Incurred</u>	<u>Costs Reclassified</u>	<u>Net Anticipated Unrecoverable (Acct No. 553)</u>	<u>Insurance Deductible (Acct No. 924)</u>	<u>Total Expense As of 6/30/07</u>
2005	December	15,386	(15,386)	0	750,000	750,000
2006	January	5,174	(5,174)	0	0	0
2006	February	60,574	(60,574)	0	0	0
2006	March	219,619	(219,619)	0	0	0
2006	April	10,407	(10,407)	(0)	0	(0)
2006	May	1,960	(1,960)	0	0	0
2006	June	37,241	(37,241)	0	0	0
2006	July	318,828	(318,828)	0	0	0
2006	August	61,307	(61,307)	0	0	0
2006	September	3	(3)	0	0	0
2006	October	2,331	(2,331)	0	0	0
2006	November	4,694	(4,694)	0	0	0
2006	December	10,985	(942)	10,043	0	10,043
2007	January	2,746	(12,789)	(10,043)	0	(10,043)
2007	February	1,774	(1,774)	0	0	0
2007	March	5,034,821	(5,034,821)	0	0	0
2007	April	(1,258,805)	1,258,805	0	0	0
2007	May	1,486,434	(1,486,434)	0	0	0
2007	June	122,092	(106,298)	15,794	0	15,794
		6,137,571	(6,121,778)	15,794	750,000	765,794

CA-IR-215

**Ref: Response to CA-IR-104 (Emission Fees).**

According to this response, "The 2007 emission fee \$/ton (\$55.92) was derived by escalating the 2005 actual rate (\$53.23) by 2.5% per year....Because emission fees have been paid for the last three years (2004, 2005 and 2006), MECO does not believe historical waivers should be considered." Please provide the following:

- a. Copies of the latest available actual filing of information with the DOH to determine MECO emission fees.
- b. Copies of the latest actual payment documentation (invoices or remittance advice data) for emission fees, indicating the last \$/ton value actually paid.
- c. All information in the possession of MECO to support a conclusion that emission fee waivers granted MECO in 2001, 2003 and 2004 are not indicative of the possibility of future waivers for 2007 or 2008 or 2009.

**MECO Response:**

- a. The latest actual emission fee filing of information with the DoH was for 2006 operations.  
  
See CA-IR-215, Attachment A.
- b. Documentation of the latest actual payment for emission fees (for 2006 operations) is included within CA-IR-215, Attachment A (see response to part a. above). Indication of the last \$/ton value actually paid (\$55.15) is also included within CA-IR-215, Attachment A.  
  
Based on the DoH's actual CPI index adjustment increase of 3.6% over the previous years fee, the \$/ton value for the 2007 test year operations will be \$57.14 (\$55.15 x 1.036). As provided in MECO's response to CA-IR-104, MECO used \$55.92/ton for the 2007 test year estimate.
- c. Emission fee waivers were granted to MECO in 2001 and 2003. As indicated in MECO's response to CA-IR-104, emission fees were paid in 2004 as well as 2005 and 2006. The DoH/EPA have not provided advance notice regarding emission fee waivers, therefore MECO does not possess information on the possibility of future waivers. MECO has no control on emission fee waivers. MECO does not apply for waivers, nor has MECO

provided any documentation to receive waivers. It is MECO's understanding that EPA has final say on the waivers. MECO does not know why waivers were granted in 2001 and 2003. (MECO did not receive a waiver in 2004.) MECO believes 2004-2006 are more representative than previous years for a number of reasons, including they are the most recent and, for the first time in their eleven year history, emission fees were levied on MECO for three consecutive years. In addition, based on the ever growing number of state and federal environmental initiatives and regulations (including the state mandate for renewable energy and the federal efforts to reduce green house gases) it appears that the DoH/EPA have the need for a consistently increasing level of funding in future years.

Attachment A is voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. An electronic version containing the requested information is being provided on a compact disc.

CA-IR-216

**Ref: Response to CA-IR-86 (Lube Oil Expense).**

Please provide the following additional information:

- a. Calculations and additional data used to translate unit prices shown in Attachment 3 to the unit prices reflected in MECO-WP-509-a for each Division.
- b. Calculations that would be needed to translate unit prices shown in Attachment 4 into updated unit prices to reflect current price levels in MECO-WP-509-a for each Division.

**MECO Response:**

- a. See Attachment 1.
- b. See Attachment 1.

**Confidential Information Deleted**  
**Pursuant to Protective Order No. 23379**

CA-IR-216  
DOCKET NO. 2006-0387  
ATTACHMENT 1

The requested information is confidential and will be provided pursuant to  
Protective Order No. 23379, dated April 23, 2007.

CA-IR-217

**Ref: MECO-WP-509-a (Lube Oil Usage).**

Please provide the following information regarding oil usage assumed for the test year:

- a. Explain whether annual oil usage is a function of operating hours, kwh output or some other operational statistic.
- b. Provide for each category of lube oil the historical operational statistic(s) believed to be most directly correlated to lube oil usage.
- c. Provide, based upon test year system simulation, the normalized test year operational statistics for each category of generation needed to determine lube oil usage rates.
- d. Provide any additional information necessary to document how MECO determined the test year "Annual oil usage" for each type of lube oil.
- e. Explain and quantify any additional adjustment that is required to completely synchronize annual lube oil usage values with the system generation simulation for the test year.
- f. Explain how the "oil changes" in WP-509-a correlate with the "2007 Overhaul Normalization" set forth at MECO-WP-505 and provide and quantify any additional adjustment that is required to completely synchronize annual lube oil changes with the normalized overhaul schedule for the test year.

**MECO Response:**

- a. Lube oil consumption is a function of operating hours and the condition of the generating unit.
- b. Attachment 1 provides, for each category of lube oil, historical statistics for operating hours, and lube oil use.
- c. Based upon test year system simulation, the normalized test year operations statistics for each category of generation needed to determine lube oil usage rates are provided in Attachment 1. The average lube oil consumption, operating hours, and lube oil consumption per operating hour are shown for 2003 to 2006.
- d. MECO's test year annual lube oil usage includes an adjustment for unscheduled running hours. Knowing that the production simulation forecasts the generating units in an ideal situation, the production simulation results have been adjusted to include lube oil usage for



unscheduled running hours in the test year. To maintain unit reliability the generating units need to be run periodically to ensure that they will start when needed. The extra run hours for peaking units which are included in the test year are not in the production simulation forecast, and a small amount of additional lube oil usage is included in the test year to cover these exercises. The unscheduled running hours lube oil adjustment is shown in Attachment 2.

- e. As mentioned in item d, the lube oil forecast has been adjusted from \$864,781 to an estimate of \$875,000 for additional running of the engines not accounted for by the system generation simulation for the test year.
- f. The lube oil shown for oil changes is not considered in the lube oil consumption but is shown as inventory to be used if there is a need to replace the oil from contamination or engine damage.

**ATTACHMENT I**  
**OPERATING STATISTICS**

**LUBE OIL USAGE, GALS**

<u>UNIT</u>	<u>LUBE OIL TYPE</u>	<u>HISTORICAL</u>				<u>HISTORICAL CONSUMPTION</u> (GALLONS PER HOUR)				
		<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>AVERAGE</u>
MX1	Super RR EW40	696	1,357	3,482	4,811	1.3	1.3	1.2	1.4	1.3
MX2	Super RR EW40	1,868	1,455	3,432	4,811	1.3	1.3	1.2	1.4	1.3
M1	Super RR EW40	3,072	2,559	4,843	5,724	1.3	1.3	1.2	1.4	1.3
M2	Super RR EW40	2,266	2,234	4,571	4,596	1.3	1.3	1.2	1.4	1.3
M3	Super RR EW40	2,924	2,972	1,641	4,792	1.3	1.3	1.2	1.3	1.3
M4	Mobilgard ADL	6,218	5,057	3,515	6,619	1.3	0.9	1.0	1.2	1.1
M5	Mobilgard ADL	7,930	9,825	1,844	5,317	1.6	1.8	2.0	2.8	2.1
M6	Mobilgard ADL	3,899	5,923	10,140	12,429	0.8	1.2	1.6	2.1	1.4
M7	Mobilgard ADL	3,119	7,069	1,278	2,156	0.6	1.2	1.6	1.3	1.1
M8	Mobilgard ADL	5,320	1,540	4,190	5,890	1.6	1.6	0.8	1.1	1.3
M9	Mobilgard ADL	3,410	2,970	15,440	9,200	4.4	2.4	3.2	3.0	3.3
M10	Mobilgard ADL	10,142	55,723	51,990	61,937	1.3	9.8	6.4	8.3	6.5
M11	Mobilgard ADL	44,454	74,824	43,105	24,201	5.4	12.2	5.2	3.8	6.7
M12	Mobilgard ADL	40,380	28,270	40,980	32,050	6.2	3.3	6.2	4.0	4.9
M13	Mobilgard ADL	75,090	32,750	24,820	17,010	11.7	4.5	4.6		6.9

**OPERATING HOURS**

<u>UNIT</u>	<u>MANUFACTURER</u>	<u>HISTORICAL</u>				<u>2007 TEST YEAR</u>				
		<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>FORECAST</u> <u>HOURS</u>	<u>AVERAGE</u> <u>CONSUMPTION</u>	<u>LUBE OIL</u> <u>USED (GALS)</u>	<u>PRICE</u> <u>COST/GAL</u>	<u>TEST YEAR</u> <u>FORECAST</u>
MX1	EMD	535	1,044	3,011	3,368	1	1.3	1.3	\$9.27	\$12
MX2	EMD	1,438	1,120	2,949	3,392	1	1.3	1.3	\$9.27	\$12
M1	EMD	2,363	1,969	3,996	4,132	2	1.3	2.6	\$9.27	\$24
M2	EMD	1,743	1,718	3,855	3,197	4	1.3	5.2	\$9.27	\$48
M3	EMD	2,249	2,286	1,330	3,619	8	1.3	10.4	\$9.27	\$96
M4	COOPER	4,913	5,659	3,476	5,511	132	1.1	144.3	\$7.14	\$1,030
M5	COOPER	5,111	5,358	906	1,912	20	2.1	41.0	\$7.14	\$293
M6	COOPER	4,668	5,023	6,272	6,007	465	1.4	662.7	\$7.14	\$4,731
M7	COOPER	5,598	6,000	798	1,718	50	1.1	57.4	\$7.14	\$410
M8	COLT	3,285	980	5,031	5,207	912	1.3	1,175.3	\$7.14	\$8,392
M9	COLT	770	1,213	4,833	3,037	1,479	3.3	4,844.1	\$7.14	\$34,587
M10	MITSUBISHI	7,515	5,674	8,140	7,473	3,103	6.5	20,049.6	\$7.14	\$143,154
M11	MITSUBISHI	8,179	6,143	8,223	6,348	4,437	6.7	29,583.6	\$7.14	\$211,227
M12	MITSUBISHI	6,531	8,462	6,565	8,027	4,490	4.9	22,179.0	\$7.14	\$158,358
M13	MITSUBISHI	6,427	7,246	5,345		6,095	6.9	42,353.8	\$7.14	\$302,406

**CALCULATED                    \$864,781**

**UNSCHEDULED ADJUSTMENT                    \$10,219**

**TOTAL TEST YEAR FORECAST                    \$875,000**

## ATTACHMENT 2

### UNSCHEDULED RUN HOURS ADJUSTMENT

#### PEAKING UNITS

UNIT	EXERCISE HRS/WK	USAGE				
		GAL/HR	GAL/WK	\$/GAL	\$/WK	ANNUAL
X1	2	1.3	2.6	9.27	24.10	\$1,253
X2	2	1.3	2.6	9.27	24.10	\$1,253
M1	2	1.3	2.6	9.27	24.10	\$1,253
M2	2	1.3	2.6	9.27	24.10	\$1,253
M3	2	1.3	2.6	9.27	24.10	\$1,253
Unscheduled	320	1.3		9.27		\$3,856
					Total	\$10,123
				ADJUSTMENT		\$10,219

Note: Unscheduled running hours = 40 hrs/wk \* 8 wks

Note: Estimated adjustment to round out total forecast in Attachment 1.

CA-IR-218

**Ref: MECO-501, page 3; MECO IRP-3 Filing in Docket No. 04-0077, pages 5-19  
Table 5.6-1 (Maalaea Units 17, 18, and 19).**

According to the Company's IRP filing the NTL and Reserve Gross Rating for Maalaea Units 17, 18, and 19 are 60.4MW, while MECO-501 lists this resource at 58.0 Gross MW. Please provide the following:

- a. Which is the correct rating and why are they different in these two documents?
- b. Please provide copies of any output test data supportive of your response to part (a) of this information request.

**MECO Response:**

- a. The 58.0 MW gross rating is the correct rating to use for this proceeding. MECO plans to conduct a capacity test for units M17, 18, and 19 in dual-train combined cycle operation in September 2007 to determine the NTL and Reserve Gross Ratings of these units. The 58.0MW rating reflected in MECO-501, came from MECO's Adequacy of Supply filings with the PUC for units M17, 18, and M19 in dual-train combined cycle operation, and is based on the gross rating of the existing dual-train combined cycle units M14, 15, and 16. Since M14, 15, and 16 utilize the same engines as M17, 18, and 19, and the basic designs of the first DTCC and the second DTCC are similar, the second DTCC is assumed at the same capacity as the first DTCC, until capacity testing is completed. There are many factors that affect the capacity of the units in dual-train combined cycle operation, so until the capacity test is completed in September 2007, MECO will assume the capacity of M17, 18, and 19 is the same as M14, 15, and 16 in dual-train combined cycle operation. The 60.4MW gross rating that was used in IRP-3 came from an estimated gross rating for a typical dual-train combined cycle used in IRP-2 filing, from consultant Black & Veatch who was retained by MECO to assist in developing MECO's Unit Information Form.

- b. A capacity test for units M17, 18, and 19 in dual-train combined cycle operation scheduled for the later part of July 2007 was postponed to September 2007 due to fuel testing of generating units at the Maalaea Power Plant. The capacity test for Units 17, 18, and 19 will determine the NTL and Reserve Gross Ratings of these units.

CA-IR-219

**Ref: MECO-WP-505, page 1; Response to CA-IR-81, Attachment 3, page 4 (Mitsubishi Actual Overhaul Expenses).**

The Attachment 3 document has boxed areas around "TOP" and "MAJOR" historical overhaul expenditure amounts. Please provide the following:

- a. Identify the scope of work differences associated with Top versus Major overhauls.
- b. Explain and quantify how the historical data for each year shown was combined or averaged to derive the input amounts for each unit, M10 through M13 on WP-505.
- c. Explain how the 12,000 hour maintenance frequency in WP-505 was determined for these units, with specific reference into the relevant pages of Attachment 2, pages 29-56, which appears to document various maintenance intervals for specific equipment components.

**MECO Response:**

- a. The manufacturer of the Mitsubishi diesel engines recommend maintenance and inspection of various components on the engine between 10,000 and 12,000 hours of operation. MECO considers these maintenance periods as overhauls. The first overhaul after commercial operation is considered a "top" overhaul where the engine is inspected and the turbocharger, head and cylinder components are tested and reconditioned or replaced. The next overhaul period is considered a "major" overhaul where all main bearings are replaced along with similar work from a "top" overhaul. The work done at these overhauls are rotated every overhaul period where MECO has an "top" overhaul, then a "major" overhaul, then a "top" overhaul, etc. With the years of operation that the MECO units have been in operation the manufacturer has recommended that an inspection of all main bearings be done during the top overhauls and replaced as needed. The difference between a "top" overhaul and a "major" overhaul is that during a "major" overhaul the main bearings are removed and replaced.

- b. The historical data used to derive the overhaul costs for the Mitsubishi units were submitted with CA-IR-84, Attachment 1, page 4. Since units M10 and M11 are identical units and M12 and M13 are identical units, an equal number of "TOP" and "MAJOR" overhauls were used to determine unit overhaul costs.
- c. In the response to CA-IR-81, Attachment 2, pages 29 through 37, there is a chart provided by Mitsubishi with the maintenance recommended at various operating hour intervals. In the 10,000 to 12,000 hour range Mitsubishi identifies certain pieces of the engine to be overhauled. See pages 34-36. The overhaul at this period is considered the "TOP" overhaul. There are pieces of equipment that include these 12,000 hour maintenance items and also 24,000 hour maintenance items and this is considered the maintenance required for the "MAJOR" overhaul. See pages 34-36.

CA-IR-220

**Ref: MECO-WP-505, page 1; Response to CA-IR-81, Attachment 3, page 5 (LM 2500 Actual Overhaul Expenses).**

The Attachment 3 document has boxed areas around certain recorded costs, with only some of the amounts tying directly into the adjustment shown in WP-505. Please provide the following:

- a. Identify the scope of work differences associated with historical LM 2500 overhauls, explaining why costs range from a low of \$545,007 for M-17 in 2004 to a high of \$1.9 million for M-14 in 2005 and indicating which prior overhauls were hot section replacements, power turbine overhauls or some other scopes.
- b. What were the cumulative operating hours at each historical overhaul shown for M14, M16, M-17 and M-19 on Attachment 3, page 5 and how do such intervals (hours between overhauls) compare with the recommended prospective maintenance frequencies in WP-505?
- c. Explain the scope of work assumed to be a "normal" overhaul at 50,000 hours and a "Hot Sect Repl" at 16,000 hours for each CT in WP-505.
- d. Explain how information in CA-IR-81, Attachment 2 was used to determine the proposed maintenance intervals, with particular reference to page 58 of that Attachment.
- e. Explain and provide supporting calculations for the 52,560 steam turbine interval and \$71,550 cost, referencing the information within CA-IR-81 that was used in support of each value.
- f. Provide operating hours and expenses for each historical M15 steam turbine overhaul performed to-date.

**MECO Response:**

- a. The \$545,007 cost for the M17 engine in 2004 was for a hot section replacement. The \$1.9 million cost for M14 in 2005 was for a 50,000 hour overhaul. The costs shown in CA-IR-81 for prior overhauls are hot section replacement costs, except for the M14 overhaul in 2005, which was for the 50,000 hour overhaul of M14.
- b. The cumulative operating hours for each historical overhaul shown for M14, M16, M-17 and M-19 on CA-IR-81, Attachment 3, page 5, are shown below. The intervals (hours between overhauls) are generally consistent with the recommended prospective maintenance frequencies in MECO-WP-505 as modified by MECO as discussed in the response to part d., below. A hot section replacement was done for M19 earlier than normal on the original hot section because of unexpected degradation that resulted from factors such as unit trips. The



hard coating that is used to extend the hot section replacement life was not available from the engine manufacturer, and is provided by an after-market vendor. MECO also utilizes a different material type of blades manufactured by an after-market vendor which allowed some of our hot sections to last for over 12,500 hours. With the hard coating MECO now uses an interval of 16,000 hours for its hot section replacement.

UNIT	YEAR	CUMULATIVE HOURS	MAINTENANCE
M14	2001	72,619	Hot Section Replacement
M14	2003	91,113	Hot Section Replacement
M14	2005	104,581	50,000 hour Overhaul
M16	2002	71,455	Hot Section Replacement
M16	2004	85,401	Hot Section Replacement
M16	2007	112,504	50,000 hour Overhaul
M17	2004	17,314	Hot Section Replacement
M17	2007		Scheduled for 10/2007
M19	2003	10,219	Hot Section Replacement
M19	2006	30,350	Hot Section Replacement

- c. A 50,000 hour overhaul on the engine is performed at a qualified engine facility where the engine is completely torn down and inspected. The scope of work for a 50,000 hour overhaul is determined after an inspection of the parts and a determination of what is required to rebuild the engine to factory specifications. The scope of work for a "Hot Sect Repl" at 16,000 hours consists of replacement of the hot section (combustion section) of the CT engine.
- d. Page 58 of Attachment 2 identifies the manufacturer's recommended interval for a hot section replacement at 12,500 hours for a liquid fuel LM2500 engine. MECO has found that

by reducing the combustion temperature and by applying a hardened coating on the turbine blades that the hot sections part of the engine can be extended. MECO uses 16,000 hours as its hot section interval period.

- e. The 52,560 hours was determined from 6 years x 8,760 hours per year. MECO does steam turbine overhauls on its generators at its Kahului Power Plant on 6-year intervals. A 6-year maintenance interval was determined to be reasonable for the Maalaea Power Plant steam turbine units, because the steam turbine used for the combined cycle plant is similar in size and operation as these units at the Kahului Power Plant. The \$71,500 cost for the steam turbine overhaul was determined from the approximate average overhaul cost of the Kahului steam turbine units (see table below). Although the Maalaea steam turbine is slightly larger than the Kahului units, MECO felt that the estimated cost was reasonable to be used for rate making purposes.

**STEAM TURBINE OVERHAUL COST**  
MECO-WP-505, Page 1

UNIT	YEAR	EXPENSES
K1	2001	85,658
K2	2004	61,419
K3	2005	67,876
K4	2005	71,246
Total		286,199
Average		71,550

- f. The operating hours and expenses for each historical M15 steam turbine overhaul performed to date are reported below.

UNIT	YEAR	CUMULATIVE OPERATING HOURS	OVERHAUL EXPENSE	DESCRIPTION
M15	2000	57,098	\$87,810	Material & Outside Services
M15	2006	107,358	\$112,401	Material & Outside Services

CA-IR-221

**Ref: MECO-WP-505 (2007 Overhaul Normalization).**

The Company's adjustment for Maui Division reflects much lower "2007 Norm (\$)" overhaul activity levels than were included in the "2007 Budget." Please provide the following information:

- a. Explain whether the Company's planned overhauls for 2008 and subsequent years include the relatively infrequent EMD, Cooper and Colt overhauls as reflected in the normalization.
- b. Explain whether the Company's planned overhauls for 2008 and subsequent years include the reduced frequency Mitsubishi overhauls every 2 – 4 years, as reflected in the normalization (based upon annual run hours of 3,100 to 6,100 as shown in column A).
- c. Explain whether the Maalaea combustion turbine planned overhauls for 2008 and subsequent years include the reduced frequency hot section and full overhauls every 2-5 years, as reflected in the normalization (based upon annual run hours of 7,000 to 8,600 as shown in column A).
- d. Provide a complete copy of the Company's most current available long term future overhaul schedule for the Maui Division and explain how such forecast compares to the responses provided to parts (a) through (c) of this information request.
- e. To what extent was the higher than "normalized" overhaul activity level anticipated in the "2007 Budget" a result of deferred overhaul activity under the prior mode of operations, before commercial availability of M18 and Kaheawa Wind Power?

**MECO Response:**

- a. The planned overhauls for 2008 and 2009 do not use the infrequent, normalized running hours in the simulation forecast. MECO does not forecast individual unit overhauls beyond two years due to the constant changes in operation of units due to unscheduled maintenance issues. MECO only uses the infrequent, normalized operating hours to normalize maintenance costs for ratecase purposes. The Company's planned overhauls for 2008 and 2009 are based upon recorded running hours and estimated running hours. The overhauls on the Mitsubishi units which will be cycling every day are based upon their recorded running hours and a forecast daily running. Presently (as of June 2007) cycling units M5 and M6 are overdue by 1,500 hours and 2,100 hours respectively so are scheduled to be overhauled in 2008. Peaking units M1 and M2 are overdue for overhauls by 2,000 hours and 1,200 hours (as of June 2007) respectively and are also scheduled for overhaul in 2008. In 2009 unit M7

is scheduled for overhaul. This is a cycling unit which presently has over 19,000 hours (as of June 2007) with an overhaul coming due at 20,000 hours.

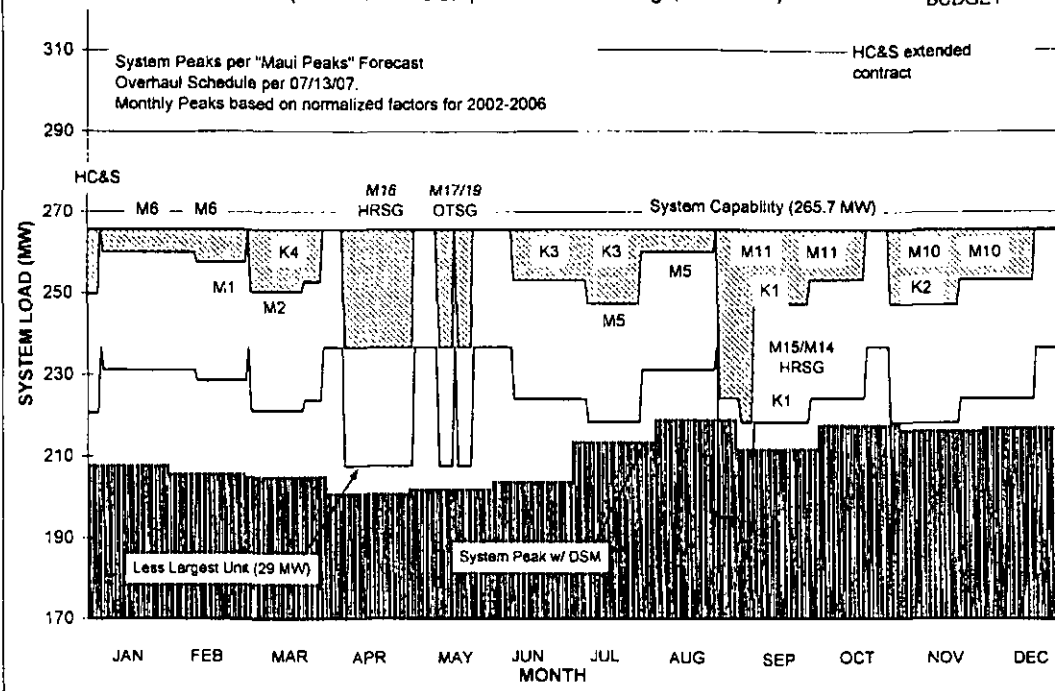
- b. MECO's planned overhauls for 2008 and 2009 include Mitsubishi overhauls every 12,000 hours, as reflected in the normalization (and not every 2-4 years as is incorrectly stated in the information request). MECO forecasts overhaul schedules only two years into the future. The budget forecast for 2008 is based on the need to do catch up maintenance on many of the Maalaea generating units. Forecast overhauls are based on recorded running hours and not on the simulation running hours. Simulation runs are used for fuel forecasting and not for maintenance purposes. Overhaul schedules are part of the database for the simulations. Simulations are not used to schedule overhauls.
- c. The Maalaea combustion turbine planned overhauls for 2008 and 2009 do not include the reduced frequency hot section (12,500 hours) and full overhauls (50,000 hours), as reflected in the normalization (and not every 2-5 years, as is incorrectly stated in the information request). The overhauls planned for the combustion turbines are based on recorded running hours. Because of numerous changes in operating conditions throughout the year the overhaul schedules are periodically updated. Overhaul schedules are forecast only two years in advance for budgeting purposes. The simulations are based on the two year overhaul schedule used for budgeting and normalized for any additional years. The normalized running hours of the combustion turbines do not account for the present number of operating hours already on the unit since the last maintenance.
- d. See Attachment 1 for MECO's 2008 and 2009 overhaul schedules. The MECO Power Supply department does not forecast overhauls beyond two years.
- e. There were no overhauls deferred due to the delay of KWP coming online. The overhaul on unit M10 was deferred from October 23, 2006 to December 19, 2006, due to M18.

VERSION 0

# MAUI 2008R0 SYSTEM CAPABILITY

(PM Peak w/ DSM, w/ Reserve Ratings, w/ HC&S)

-- 07/13/07 --  
2008 DRAFT  
BUDGET

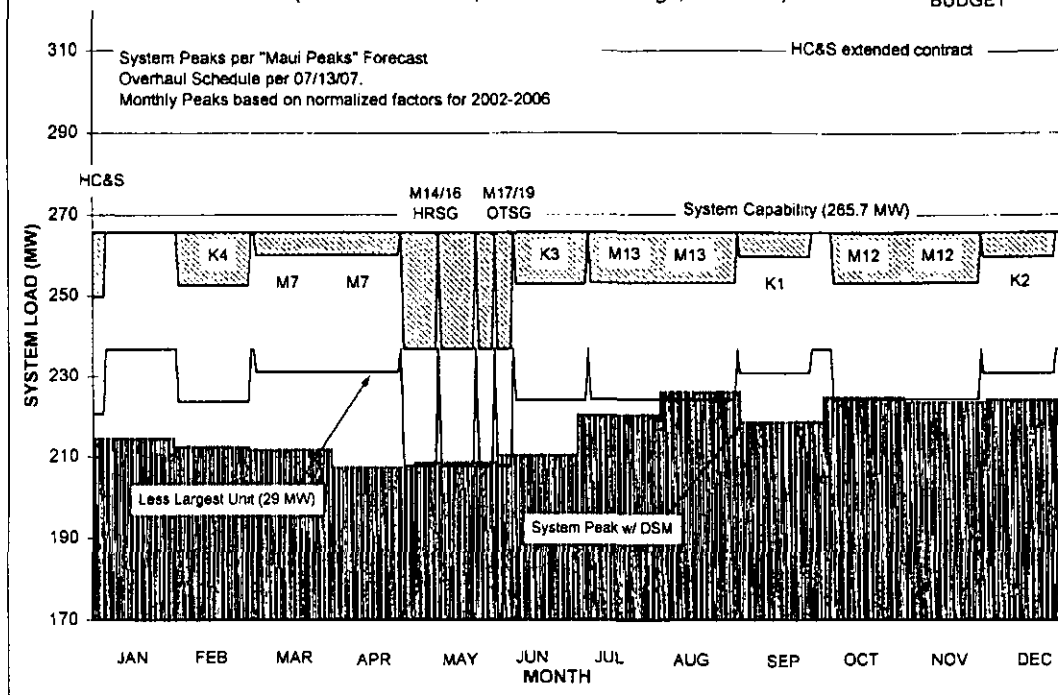


Month (1)	System Pk w/ DSM (MW) (2)	System Cap (MW) (3)	Maint (MW) (4)	Reserve (MW) (5)=(3)-(4)-(2)	% Reserve (Less Maint) (5) / (2)	Lrgst Avail (MW) (7)	LSC Diff (MW) (5) - (7)
JAN	208.0	265.7	16.00	41.73	20.07%	29.00	12.73
FEB	205.9	265.7	8.10	51.73	25.13%	29.00	22.73
MAR	205.1	265.7	15.50	45.06	21.96%	29.00	16.06
APR	200.9	265.7	29.00	35.78	17.81%	29.00	5.78
MAY	202.0	265.7	29.00	34.70	17.18%	29.00	5.70
JUN	203.8	265.7	12.70	49.15	24.11%	29.00	20.15
JUL	213.6	265.7	18.30	33.80	15.82%	29.00	4.80
AUG	219.1	265.7	41.50	5.06	2.31%	29.00	-23.94
SEP	211.8	265.7	47.40	6.50	3.07%	29.00	-22.50
OCT	217.7	265.7	18.50	29.49	13.55%	29.00	0.49
NOV	216.4	265.7	18.50	30.77	14.22%	29.00	1.77
DEC	217.2	265.7	12.50	36.01	16.58%	29.00	7.01

M6	01/07/08-03/01/08	8 Weeks	Major overhaul
M1	02/11/08-03/01/08	3 Weeks	Major overhaul. Contracted
M2	03/03/08-03/22/08	3 Weeks	Major overhaul. Contracted
K4	03/03/08-03/29/08	4 weeks	Annual overhaul. Control system upgrade.
M16 HRSG	04/07/08-05/02/08	4 weeks	Annual overhaul. Controls upgrade. HMI interface. DA work. Gen clear
M17 OTSG	05/12/08-05/17/08	1 week	Annual overhaul.
M19 OTSG	05/19/08-05/24/08	1 week	Annual overhaul.
K3	06/09/08-07/26/08	7 weeks	Annual overhaul. ID Fan replacement.
M5	07/07/08-08/23/08	7 Weeks	Major overhaul
M14 HRSG	08/25/08-08/30/08	1 week	Annual overhaul.
M15	08/25/08-09/06/08	2 weeks	Annual overhaul. Controls upgrade.
K1	09/02/08-09/27/08	4 weeks	Annual overhaul.
M11	08/25/08-10/18/08	8 Weeks	Major overhaul
K2	10/27/08-11/22/08	4 weeks	Annual overhaul.
M10	10/27/08-12/20/08	8 Weeks	Major overhaul

# **MAUI 2009R0 SYSTEM CAPABILITY** (PM Peak w/ DSM, w/ Reserve Ratings, w/ HC&S)

-- 07/09/07 --  
2009 DRAFT  
BUDGET



Month (1)	System Pk w/ DSM (MW) (2)	System Cap (MW) (3)	Maint (MW) (4)	Reserve (MW) (5)=(3)-(4)-(2)	% Reserve (Less Maint) (5) / (2)	Lrgst Avail (MW) (7)	LSC Diff (MW) (5) - (7)
JAN	214.6	265.7	16.00	34.91	16.25%	29.00	5.91
FEB	212.6	265.7	13.00	40.07	18.84%	29.00	11.07
MAR	211.9	265.7	5.60	48.21	22.75%	29.00	19.21
APR	207.5	265.7	29.00	29.16	14.05%	29.00	0.16
MAY	208.7	265.7	29.00	28.04	13.44%	29.00	-0.96
JUN	210.6	265.7	29.00	26.14	12.41%	29.00	-2.86
JUL	220.6	265.7	12.70	32.38	14.67%	29.00	3.38
AUG	226.3	265.7	12.50	26.86	11.87%	29.00	-2.14
SEP	218.8	265.7	5.90	41.03	18.75%	29.00	12.03
OCT	224.9	265.7	12.50	28.33	12.60%	29.00	-0.67
NOV	223.6	265.7	12.50	29.65	13.26%	29.00	0.65
DEC	224.3	265.7	6.00	35.36	15.76%	29.00	6.36

K4	02/02/09-02/28/09	4 weeks	Annual overhaul.
M7	03/02/09-04/25/09	8 Weeks	Major overhaul
M14 HRSG	04/27/09-05/09/09	2 weeks	Annual overhaul.
M16 HRSG	05/11/09-05/23/09	2 weeks	Annual overhaul.
M17 HRSG	05/25/09-05/30/09	1 week	Annual overhaul.
M19 HRSG	06/01/09-06/06/09	1 week	Annual overhaul.
K3	06/08/09-07/04/09	4 weeks	Annual overhaul.
K1	08/31/09-09/26/09	4 weeks	Annual overhaul.
M13	07/06/09-08/29/09	8 Weeks	Major overhaul
M12	10/05/09-11/28/09	8 Weeks	Major overhaul
K2	11/30/09-12/26/09	4 weeks	Annual overhaul.

CA-IR-222

**Ref: MECO-WP-505; Response to CA-IR-92, Attachment 4 (2007 Overhaul Normalization)**

The Company's adjustment for Maui Division reflects much lower "2007 Norm (\$)" overhaul activity levels than were included in the "2007 Budget". Please provide the following:

- a. Explain all reasons why the CA-IR-92, Attachment 4 MGD Maalaea Overhaul hours that are not normalized can be reasonable for inclusion in ongoing labor expenses for ratemaking purposes, when the corresponding overhaul non-labor costs have been determined to not be "normal" and are restated in the adjustment at MECO-WP-505.
- b. Please explain whether and when the Company intends to reduce MGD staffing levels so as to reflect declining utilization of the diesel generators with M18 and Kaheawa now in service and the corresponding reduction in overhaul frequency that is now anticipated.
- c. Please describe the details of any plans MECO has to retrain and/or transfer MGD personnel to other areas of the Company in light of the reduced diesel unit normalized utilization that is reflected in MECO-WP-505.
- d. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents prepared by or for MECO since January 1, 2006 to evaluate the staffing requirements at Maalaea.

**MECO Response:**

- a. MECO did not normalize diesel maintenance overhaul labor in its direct testimony, because overall maintenance labor is "self-normalizing." That is, when maintenance labor is not involved with overhauls they will do preventive maintenance on the other units, corrective maintenance repairing a unit, or maintain common equipment around the power plant facility. When needed, maintenance personnel also maintain the emergency standby units in Hana. The attached Exhibits 1, 2, and 3 illustrate what the normalized test year 2007 production maintenance labor may have been. Exhibit 1 shows the difference between overhaul labor hours in the 2007 budget and the illustrative normalized test year 2007 overhaul labor hours. The 20,923 labor hour difference reflects the overhaul labor hours that would have to be assigned to non-overhaul production maintenance activities. The four hour difference (due to rounding, should be zero) in total production maintenance reflects the "self-normalizing" character of production maintenance labor hours. Exhibit 2 shows the difference between production maintenance labor hours, by NARUC account number, for the

2007 budget and for the illustrative normalized test year 2007. The total production maintenance labor hours of 89,653 for the 2007 budget, and 89,650 for the illustrative normalized test year 2007, reflect the "self-normalizing" character of production maintenance labor hours. The last column in Exhibit 2 illustrates the allocation of production maintenance labor hours that from overhauls to non-overhaul production maintenance activities (the three hour difference is due to rounding). Exhibit 3 is organized in the same format as Exhibit 2, with added detail by activity within each NARUC account.

- b. MECO does not intend to reduce its MDG staffing level. With a decrease in overhauls MECO sees an opportunity for some of its mechanics to get involved in a predictive maintenance program to increase reliability and reduce breakdown maintenance costs by identifying maintenance problems before major damage occurs. This program will also be able to identify equipment problems and schedule maintenance to reduce downtime and overtime work. There have been no maintenance manpower increases with the addition of the combustion turbine units and these units have more auxiliary equipment than the diesels. MGD labor will be utilized to maintain all these additional equipment.
- c. MECO also sees an opportunity for diesel maintenance mechanics to provide repair and overhaul services for the units at the Miki Basin Power Plant on Lanai and the Palaau Power Plant on Molokai. Presently there has been no studies to determine the level of training needed for the MGD diesel maintenance mechanics to service and maintain the various types of units at the Lanai and Molokai Power Plants. With training there can be more support for a preventive maintenance and predictive maintenance program to ensure the reliability of the generation units on these islands.
- d. MECO has not done or had prepared for it any studies, reports, analyses, workpapers, or projections since January 1, 2006 to evaluate staffing requirements at Maalaea.



**EXHIBIT 1**  
MAUI DIVISION  
PRODUCTION MAINTENANCE LABOR

**2007 Budget and Test Year 2007 Overhaul Labor Hours**

	Labor Hours, 2007 Budget	Illustrative Normalized Test Year 2007	Difference 2007 Budget & Illustrative Normalized Test Year 2007
<b>GENERATING UNITS</b>			
EMD (M1-3, X1, X2)	1,271	2	1,268
COOPER (M4-7)	21,144	698	20,446
COLTS (M8-9)	7,720	1,027	6,693
MITSUBISHI (M10-13)	9,841	14,860	(5,019)
CT HOT SECTION (M14, M16, M17, M19)	672	630	42
CT OVERHAUL (M14, M16, M17, M19)	296	211	85
STEAM TURBINES, ANNUAL (M15, M18)	3,840	5,760	(1,920)
STEAM TURBINES, OVERHAUL (M15, M18)	-	673	(673)
KAHULUI OVERHAUL MAINTENANCE	16,098	16,098	-
 TOTAL OVERHAUL LABOR HOURS	 60,882	 39,959	 20,923
OTHER MAINTENANCE LABOR HOURS	28,771	49,690	(20,919)
TOTAL PRODUCTION MAINTENANCE LABOR HOURS	89,653	89,649 *	4 *

\* Variance due to rounding.

## EXHIBIT 2

### MAUI DIVISION SUMMARY

#### Production Maintenance Labor Hours

NARUC	Labor Hours, 2007 Budget	Illustrative Normalized Test Year 2007	Difference 2007 Budget & Illustrative Normalized Test Year 2007
511	2,830	2,698	132
512	17,653	19,405	-1,752
513	8,555	9,396	-841
514	6,992	7,952	-960
552	2,371	2,167	204
553	48,078	44,858	3,220
554	3,174	3,174	0
<b>TOTAL MAUI DIVISION</b>	<b>89,653 *</b>	<b>89,650 *</b>	<b>3 *</b>

\* difference due to rounding

CA-IR-222  
DOCKET NO. 2006-0387  
EXHIBIT 3  
PAGE 1 OF 4  
(REVISED 10/12/07)

RA	Act	Activity	NARUC	NARUC Descr	Loc	Ind	Proj	Labor Hours 2007 Budget	Illustrative Normalized Test Year 2007	Difference 2007 Budget & Illustrative Normalized Test Year 2007
MGB	265	Maint Stn Common Struct & Sys-Corr	511	MAINT STRUCTURES	NST	NE	NMGZZZZZ	1,538	1,406	-132
MGB	265	Maint Stn Common Struct & Sys-Corr	511	MAINT STRUCTURES	NTF	NE	NMGZZZZZ	12	12	0
MGB	271	Maint Fuel Feed System-Corrective	511	MAINT STRUCTURES	NTF	NE	NMGZZZZZ	144	144	0
MGE	265	Maint Stn Common Struct & Sys-Corr	511	MAINT STRUCTURES	NST	NE	NMGZZZZZ	1,136	1,136	0
511 - ACCOUNT TOTAL								2,830	2,698	-132
MGC	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	M15	NE	NMGZZZZZ	11	11	0
MGC	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	M15	NE	NMGZZZZZ	176	176	0
MGD	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	M15	NE	NMGZZZZZ	24	24	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	M15	NE	NMGZZZZZ	144	144	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	M18	NE	NMGZZZZZ	144	144	0
MGC	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	MST	NE	NMGZZZZZ	22	22	0
MGC	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	MST	NE	NMGZZZZZ	84	84	0
MGB	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N01	NE	NMGZZZZZ	683	683	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N01	NE	NMGZZZZZ	180	180	0
MGB	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N02	NE	NMGZZZZZ	683	683	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N02	NE	NMGZZZZZ	180	180	0
MGB	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N03	NE	NMGZZZZZ	685	685	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N03	NE	NMGZZZZZ	180	180	0
MGB	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N04	NE	NMGZZZZZ	685	685	0
MGE	259	Maint Boiler Plt & Rel Eq-Corr	512	MAINT BLR & FO PLT	N04	NE	NMGZZZZZ	180	180	0
MGE	271	Maint Fuel Feed System-Corrective	512	MAINT BLR & FO PLT	NST	NE	NMGZZZZZ	46	46	0
MGC	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M15	NE	M0000047	522	522	-
MGD	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M15	NE	M0000047	1,602	1,602	-
MGE	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M15	NE	M0000047	1,380	1,380	-
MGC	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M18	NE	M0000047	0	261	261
MGD	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M18	NE	M0000047	0	801	801
MGE	257	Maint Boiler Plt & Rel Eq-Prev (Annual)	512	MAINT BLR & FO PLT (Annual)	M18	NE	M0000047	0	690	690
MGB	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N01	NE	M0000168	1,216	1,216	-
MGD	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N01	NE	M0000168	160	160	-
MGE	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N01	NE	M0000168	716	716	-
MGK	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N01	NE	M0000168	320	320	-
MGB	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N02	NE	M0000146	1,182	1,182	-
MGE	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N02	NE	M0000146	682	682	-
MGK	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N02	NE	M0000146	311	311	-
MGB	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N03	NE	M0000170	1,477	1,477	-
MGE	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N03	NE	M0000170	816	816	-
MGK	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N03	NE	M0000170	389	389	-
MGB	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N04	NE	M0000172	1,181	1,181	-
MGD	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N04	NE	M0000172	466	466	-
MGE	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N04	NE	M0000172	815	815	-
MGK	257	Maint Boiler Plt & Rel Eq-Prev	512	MAINT BLR & FO PLT	N04	NE	M0000172	311	311	-
512 - ACCOUNT TOTAL								17,653	19,405	1,752
MGC	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	M15	NE	NMGZZZZZ	279	279	0
MGC	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	M15	NE	NMGZZZZZ	192	192	0
MGD	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	M15	NE	NMGZZZZZ	12	12	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	M15	NE	NMGZZZZZ	120	120	0
MGC	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	M18	NE	NMGZZZZZ	34	34	0
MGC	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	M18	NE	NMGZZZZZ	34	34	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	M18	NE	NMGZZZZZ	120	120	0
MGB	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N01	NE	NMGZZZZZ	187	187	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N01	NE	NMGZZZZZ	156	156	0
MGB	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N02	NE	NMGZZZZZ	187	187	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N02	NE	NMGZZZZZ	156	156	0
MGB	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N03	NE	NMGZZZZZ	187	187	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N03	NE	NMGZZZZZ	156	156	0
MGB	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N04	NE	NMGZZZZZ	187	187	0
MGE	262	Maint Steam TurboGen & Rel Eq-Corr	513	MAINT ELEC PLT	N04	NE	NMGZZZZZ	156	156	0
MGC	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M15	NE	M0000047	72	72	-
MGC	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M15	NE	M0000047	0	72	72
MGD	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M15	NE	M0000047	48	48	-
MGD	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M15	NE	M0000047	0	48	48
MGE	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M15	NE	M0000047	216	216	-
MGE	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M15	NE	M0000047	0	216	216
MGC	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M18	NE	M0000047	0	36	36
MGC	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M18	NE	M0000047	0	72	72
MGD	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M18	NE	M0000047	0	24	24
MGD	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M18	NE	M0000047	0	48	48
MGE	260	Maint Steam TurboGen & Rel Eq-Prev (Annu)	513	MAINT ELEC PLT (Annual)	M18	NE	M0000047	0	108	108
MGE	260	Maint Steam TurboGen & Rel Eq-Prev (Ovhl)	513	MAINT ELEC PLT (Ovhl)	M18	NE	M0000047	0	216	216
MGB	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N01	NE	M0000168	1,216	1,216	-
MGD	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N01	NE	M0000168	160	160	-
MGE	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N01	NE	M0000168	524	524	-
MGK	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N01	NE	M0000168	320	320	-
MGB	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N02	NE	M0000146	506	506	-

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RA	Act	Activity	NARUC	NARUC Descr	Loc	Ind	Proj	Labor Hours 2007 Budget	Illustrative Normalized Test Year 2007	Difference 2007 Budget & Illustrative Normalized Test Year 2007
MGE	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N02	NE	M0000146	460	460	-
MGK	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N02	NE	M0000146	134	134	-
MGB	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N03	NE	M0000170	633	633	-
MGE	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N03	NE	M0000170	548	548	-
MGK	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N03	NE	M0000170	166	166	-
MGB	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N04	NE	M0000172	506	506	-
MGD	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N04	NE	M0000172	200	200	-
MGE	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N04	NE	M0000172	549	549	-
MGK	260	Maint Steam TurboGen & Rel Eq-Prev	513	MAINT ELEC PLT	N04	NE	M0000172	134	134	-
513 - ACCOUNT TOTAL								8,555	9,396	841
MGA	701	Develop & Manage Forecasts	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	120	120	0
MGA	720	Improve Business Processes	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	48	48	0
MGA	777	Process Payroll	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	276	276	0
MGA	785	Plan for & Deter Emp Trng & Dev Needs	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	20	20	0
MGA	789	Attend Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	48	48	0
MGA	797	Attend Safety Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	12	12	0
MGA	843	Process Invoices & Other Payments	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	84	84	0
MGB	777	Process Payroll	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	422	422	0
MGB	787	Develop Employee Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	12	12	0
MGB	789	Attend Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	300	300	0
MGB	797	Attend Safety Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	252	252	0
MGC	777	Process Payroll	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	120	120	0
MGC	789	Attend Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	84	84	0
MGC	797	Attend Safety Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	27	27	0
MGD	777	Process Payroll	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	48	48	0
MGD	785	Plan for & Deter Emp Trng & Dev Needs	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	40	40	0
MGD	789	Attend Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	260	260	0
MGD	797	Attend Safety Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	187	187	0
MGD	843	Process Invoices & Other Payments	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	228	228	0
MGE	720	Improve Business Processes	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	84	84	0
MGE	777	Process Payroll	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	409	409	0
MGE	785	Plan for & Deter Emp Trng & Dev Needs	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	16	16	0
MGE	789	Attend Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	288	288	0
MGE	797	Attend Safety Training	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	168	168	0
MGM	720	Improve Business Processes	514	MAINT MISC STM PLT	MPM	NE	NMGZZZZZ	97	97	0
MGC	256	Plan/Schedule Maintenance & Construction	514	MAINT MISC STM PLT	MST	NE	NMGZZZZZ	364	364	0
MGA	212	Construct Projects	514	MAINT MISC STM PLT	NST	NE	NMGZZZZZ	15	15	0
MGA	255	Develop Outage & Project Plans	514	MAINT MISC STM PLT	NST	NE	NMGZZZZZ	240	240	0
MGB	268	Maint St Common Misc Equip-Corr	514	MAINT MISC STM PLT	NST	NE	NMGZZZZZ	1,538	1,538	0
MGE	266	Maint St Common Misc Equip-Prev	514	MAINT MISC STM PLT	NST	NE	NMGZZZZZ	459	1,419	960
MGE	268	Maint St Common Misc Equip-Corr	514	MAINT MISC STM PLT	NST	NE	NMGZZZZZ	408	408	0
MGA	876	Comply Ongoing-Wastewater	514	MAINT MISC STM PLT	NWW	NE	NMGZZZZZ	66	66	0
MGB	876	Comply Ongoing-Wastewater	514	MAINT MISC STM PLT	NWW	NE	NMGZZZZZ	72	72	0
MGE	876	Comply Ongoing-Wastewater	514	MAINT MISC STM PLT	NWW	NE	NMGZZZZZ	144	144	0
MGK	876	Comply Ongoing-Wastewater	514	MAINT MISC STM PLT	NWW	NE	NMGZZZZZ	36	36	0
514 - ACCOUNT TOTAL								6,992	7,952	960
MGC	263	Maint Stn Common Struct & Sys-Prev	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	24	24	0
MGC	265	Maint Stn Common Struct & Sys-Corr	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	24	24	0
MGC	269	Maint Fuel Feed System-Preventive	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	144	-60	-204
MGC	271	Maint Fuel Feed System-Corrective	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	22	22	0
MGD	265	Maint Stn Common Struct & Sys-Corr	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	546	546	0
MGD	271	Maint Fuel Feed System-Corrective	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	21	21	0
MGE	265	Maint Stn Common Struct & Sys-Corr	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	1,542	1,542	0
MGE	271	Maint Fuel Feed System-Corrective	552	M STRUC-OTH PRD	MNS	NE	NMGZZZZZ	48	48	0
550 - ACCOUNT TOTAL								2,371	2,167	-204
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M01	NE	NMGZZZZZ	6	6	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M01	NE	NMGZZZZZ	125	125	0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M01	NE	NMGZZZZZ	48	48	0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M02	NE	NMGZZZZZ	6	6	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M02	NE	NMGZZZZZ	32	32	0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M02	NE	NMGZZZZZ	48	48	0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M03	NE	NMGZZZZZ	7	7	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M03	NE	NMGZZZZZ	49	49	0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M03	NE	NMGZZZZZ	48	48	0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M04	NE	NMGZZZZZ	16	16	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M04	NE	NMGZZZZZ	152	152	0
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M04	NE	NMGZZZZZ	24	24	0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M04	NE	NMGZZZZZ	101	101	0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M05	NE	NMGZZZZZ	16	16	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M05	NE	NMGZZZZZ	95	95	0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M05	NE	NMGZZZZZ	105	105	0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M06	NE	NMGZZZZZ	16	16	0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M06	NE	NMGZZZZZ	95	95	0

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MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M06	NE	NMGZZZZZ	112	112		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M07	NE	NMGZZZZZ	16	16		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M07	NE	NMGZZZZZ	41	41		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M07	NE	NMGZZZZZ	112	112		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M08	NE	NMGZZZZZ	16	16		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M08	NE	NMGZZZZZ	153	153		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M08	NE	NMGZZZZZ	104	104		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M09	NE	NMGZZZZZ	16	16		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M09	NE	NMGZZZZZ	55	55		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M09	NE	NMGZZZZZ	90	90		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M10	NE	NMGZZZZZ	80	80		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M10	NE	NMGZZZZZ	145	145		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M10	NE	NMGZZZZZ	156	156		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M11	NE	NMGZZZZZ	35	35		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M11	NE	NMGZZZZZ	122	122		0
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M11	NE	NMGZZZZZ	24	24		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M11	NE	NMGZZZZZ	132	132		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M12	NE	NMGZZZZZ	35	35		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M12	NE	NMGZZZZZ	242	242		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M12	NE	NMGZZZZZ	187	187		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M13	NE	NMGZZZZZ	35	35		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M13	NE	NMGZZZZZ	135	135		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	M13	NE	NMGZZZZZ	168	168		0
MGC	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M14	NE	NMGZZZZZ	180	180		0
MGC	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M14	NE	NMGZZZZZ	84	84		0
MGD	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M14	NE	NMGZZZZZ	48	48		0
MGE	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M14	NE	NMGZZZZZ	36	36		0
MGE	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M14	NE	NMGZZZZZ	240	240		0
MGC	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M16	NE	NMGZZZZZ	180	180		0
MGC	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M16	NE	NMGZZZZZ	84	84		0
MGE	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M16	NE	NMGZZZZZ	36	36		0
MGE	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M16	NE	NMGZZZZZ	192	192		0
MGC	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M17	NE	NMGZZZZZ	180	180		0
MGC	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M17	NE	NMGZZZZZ	84	84		0
MGD	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M17	NE	NMGZZZZZ	48	48		0
MGE	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M17	NE	NMGZZZZZ	36	36		0
MGE	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M17	NE	NMGZZZZZ	192	192		0
MGC	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M19	NE	NMGZZZZZ	180	180		0
MGC	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M19	NE	NMGZZZZZ	84	84		0
MGE	272	Maint Combust Turbine & Elec Eq-Prev	553	M ELEC PLT-OTH PROD	M19	NE	NMGZZZZZ	36	36		0
MGE	274	Maint Combust Turbine & Elec Eq-Corr	553	M ELEC PLT-OTH PROD	M19	NE	NMGZZZZZ	192	192		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	MH1	NE	NMGZZZZZ	8	8		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MH1	NE	NMGZZZZZ	7	7		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	MH2	NE	NMGZZZZZ	8	8		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MH2	NE	NMGZZZZZ	8	8		0
MGE	268	Maint St Common Misc Equip-Corr	553	M ELEC PLT-OTH PROD	MHN	NE	NMGZZZZZ	120	120		0
MGC	266	Maint St Common Misc Equip-Prev	553	M ELEC PLT-OTH PROD	MNS	NE	NMGZZZZZ	156	-48		-204
MGD	266	Maint St Common Misc Equip-Prev	553	M ELEC PLT-OTH PROD	MNS	NE	NMGZZZZZ	14	9,782		9,768
MGD	268	Maint St Common Misc Equip-Corr	553	M ELEC PLT-OTH PROD	MNS	NE	NMGZZZZZ	18	9,789		9,771
MGE	266	Maint St Common Misc Equip-Prev	553	M ELEC PLT-OTH PROD	MNS	NE	NMGZZZZZ	48	1,908		960
MGE	268	Maint St Common Misc Equip-Corr	553	M ELEC PLT-OTH PROD	MNS	NE	NMGZZZZZ	1,238	1,238		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	MX1	NE	NMGZZZZZ	8	8		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MX1	NE	NMGZZZZZ	32	32		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MX1	NE	NMGZZZZZ	48	48		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	MX2	NE	NMGZZZZZ	8	8		0
MGD	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MX2	NE	NMGZZZZZ	53	53		0
MGE	277	Maint Int Combust Eng & Rel Eq-Corr	553	M ELEC PLT-OTH PROD	MX2	NE	NMGZZZZZ	48	48		0
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M03	NE	M0000151	1,095	2		(1,093)
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M03	NE	M0000151	176	0		(176)
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M04	NE	M0000065	6,240	206		(6,034)
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M04	NE	M0000065	808	27		(781)
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M05	NE	M0000066	6,240	206		(6,034)
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M05	NE	M0000066	808	27		(781)
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M06	NE	M0000022	6,240	206		(6,034)
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M06	NE	M0000022	808	27		(781)
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M08	NE	M0000067	6,240	830		(5,410)
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M08	NE	M0000067	1,480	197		(1,283)
MGB	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M12	NE	M0000050	256	387		131
MGD	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M12	NE	M0000050	8,272	12,491		4,219
MGE	275	Maint Int Combust Eng & Rel Eq-Prev	553	M ELEC PLT-OTH PROD	M12	NE	M0000050	1,313	1,983		670
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Hot:	553	M ELEC PLT-OTH PROD (HotSec)	M14	NE	M0000056	0	62		62
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovh)	M14	NE	M0000056	0	20		20
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Hot:	553	M ELEC PLT-OTH PROD (HotSec)	M14	NE	M0000056	0	57		57
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovh)	M14	NE	M0000056	0	18		18
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Hot:	553	M ELEC PLT-OTH PROD (HotSec)	M14	NE	M0000056	0	33		33
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovh)	M14	NE	M0000056	0	11		11

RA	Act	Activity	NARUC	NARUC Descr	Loc	Ind	Proj	Labor Hours 2007 Budget	Difference 2007 Budget & Illustrative Normalized Test	
									Normalized Test Year 2007	Normalized Test Year 2007
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M16	NE	M0000056	120	61	(59)
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M16	NE	M0000056	120	28	(92)
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M16	NE	M0000056	0	57	57
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M16	NE	M0000056	112	18	(94)
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M16	NE	M0000056	0	33	33
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M16	NE	M0000056	64	10	(54)
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M17	NE	M0000356	0	64	64
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M17	NE	M0000356	0	21	21
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M17	NE	M0000356	160	86	(74)
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M17	NE	M0000356	0	28	28
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M17	NE	M0000356	56	30	(26)
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M17	NE	M0000356	0	10	10
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M19	NE	M0000357	120	53	(67)
MGC	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M19	NE	M0000357	0	17	17
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M19	NE	M0000357	160	70	(90)
MGD	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M19	NE	M0000357	0	23	23
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Hot	553	M ELEC PLT-OTH PROD (HotSec)	M19	NE	M0000357	56	25	(31)
MGE	272	Maint Combust Turbine & Elec Eq-Prev (Ovh	553	M ELEC PLT-OTH PROD (Ovhl)	M19	NE	M0000357	0	8	8
553 - ACCOUNT TOTAL								48,078	44,858	(3,220)
MGA	212	Construct Projects	554	M MISC PLT-OTH PROD	MNS	NE	NMGZZZZZ	15	15	0
MGA	255	Develop Outage & Project Plans	554	M MISC PLT-OTH PROD	MNS	NE	NMGZZZZZ	264	264	0
MGC	256	Plan/Schedule Maintenance & Construction	554	M MISC PLT-OTH PROD	MNS	NE	NMGZZZZZ	364	364	0
MGD	255	Develop Outage & Project Plans	554	M MISC PLT-OTH PROD	MNS	NE	NMGZZZZZ	719	719	0
MGM	256	Plan/Schedule Maintenance & Construction	554	M MISC PLT-OTH PROD	MNS	NE	NMGZZZZZ	97	97	0
MGC	875	Comply Ongoing Permit/Reg Reqs-Air	554	M MISC PLT-OTH PROD	MWT	NE	NMGZZZZZ	724	724	0
MGD	875	Comply Ongoing Permit/Reg Reqs-Air	554	M MISC PLT-OTH PROD	MWT	NE	NMGZZZZZ	45	45	0
MGE	875	Comply Ongoing Permit/Reg Reqs-Air	554	M MISC PLT-OTH PROD	MWT	NE	NMGZZZZZ	406	406	0
MGC	876	Comply Ongoing-Wastewater	554	M MISC PLT-OTH PROD	MWW	NE	NMGZZZZZ	396	396	0
MGE	876	Comply Ongoing-Wastewater	554	M MISC PLT-OTH PROD	MWW	NE	NMGZZZZZ	144	144	0
554 - ACCOUNT TOTAL								3,174	3,174	0
MAUI DIVISION MAINTENANCE LABOR TOTAL								89,653	89,650	-3

Difference due to rounding.

CA-IR-222

**Ref: MECO-WP-505; Response to CA-IR-92, Attachment 4 (2007 Overhaul Normalization)**

The Company's adjustment for Maui Division reflects much lower "2007 Norm (\$)" overhaul activity levels than were included in the "2007 Budget". Please provide the following:

- a. Explain all reasons why the CA-IR-92, Attachment 4 MGD Maalaea Overhaul hours that are not normalized can be reasonable for inclusion in ongoing labor expense for ratemaking purposes, when the corresponding overhaul non-labor costs have been determined to not be "normal" and are restated in the adjustment at MECO-WP-505.
- b. Please explain whether and when the Company intends to reduce MGD staffing levels so as to reflect declining utilization of the diesel generators with M18 and Kaheawa now in service and the corresponding reduction in overhaul frequency that is now anticipated.
- c. Please describe the details of any plans MECO has to retrain and/or transfer MGD personnel to other areas of the Company in light of the reduced diesel unit normalized utilization that is reflected in MECO-WP-505.
- d. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents prepared by or for MECO since January 1, 2006 to evaluate the staffing requirements at Maalaea.

**MECO Response:**

- a. MECO did not normalize diesel maintenance overhaul labor in its direct testimony, because overall maintenance labor is "self-normalizing". That is, when maintenance labor is not involved with overhauls they will do preventive maintenance on the other units, corrective maintenance repairing a unit, or maintain common equipment around the power plant facility. When needed, maintenance personnel also maintain the emergency standby units in Hana. The attached Exhibits 1, 2, and 3 illustrate what the normalized test year 2007 production maintenance labor may have been. Exhibit 1 shows the difference between overhaul labor hours in the 2007 budget and the illustrative normalized test year 2007 overhaul labor hours. The 23,925 labor hour difference reflects the overhaul labor hours that would have to be assigned to non-overhaul production maintenance activities. The one hour difference (due to rounding, should be zero) in total production maintenance reflects the "self-normalizing" character of production maintenance labor hours. Exhibit 2 shows the

difference between production maintenance labor hours, by NARUC account number, for the

2007 budget and for the illustrative normalized test year 2007. The total production

maintenance labor hours of 89,223 for the 2007 budget, and 89,222 for the illustrative normalized test year 2007, reflect the "self-normalizing" character of production maintenance labor hours. The last column in Exhibit 2 illustrates the allocation of production maintenance labor hours that from overhauls to non-overhaul production maintenance activities (the one hour difference is due to rounding). Exhibit 3 is organized in the same format as Exhibit 2, with added detail by activity within each NARUC account.

- b. MECO does not intend to reduce its MDG staffing level. With a decrease in overhauls MECO sees an opportunity for some of its mechanics to get involved in a predictive maintenance program to increase reliability and reduce breakdown maintenance costs by identifying maintenance problems before major damage occurs. This program will also be able to identify equipment problems and schedule maintenance to reduce downtime and overtime work. There have been no maintenance manpower increases with the addition of the combustion turbine units and these units have more auxiliary equipment than the diesels. MGD labor will be utilized to maintain all these additional equipment.
- c. MECO also sees an opportunity for diesel maintenance mechanics to provide repair and overhaul services for the units at the Miki Basin Power Plant on Lanai and the Palaau Power Plant on Molokai. Presently there has been no studies to determine the level of training needed for the MGD diesel maintenance mechanics to service and maintain the various types of units at the Lanai and Molokai Power Plants. With training there can be more support for a preventive maintenance and predictive maintenance program to ensure the reliability of the generation units on these islands.
- d. MECO has not done or had prepared for it any studies, reports, analyses, workpapers, or projections since January 1, 2006 to evaluate staffing requirements at Maalaea.



# **EXHIBIT 1**

## **MAUI DIVISION**

### **2007 Budget and Test Year 2007 Overhaul Labor Hours**

			Difference 2007 Budget & Illustrative Normalized Test Year 2007
<b>GENERATING UNITS</b>	<b>Labor Hours, 2007 Budget</b>	<b>Illustrative Normalized Test Year 2007</b>	
EMD (M1-3, X1, X2)	1,271	3	1,268
COOPER (M4-7)	21,144	698	20,446
COLTS (M8-9)	7,720	1,023	6,697
MITSUBISHI (M10-13)	9,841	14,728	(4,887)
CT HOT SECTION (M14, M16, M17, M19)	672	328	344
CT OVERHAUL (M14, M16, M17, M19)	296	97	199
STEAM TURBINES (M15, M18)	-	142	(142)
<b>TOTAL OVERHAUL LABOR HOURS</b>	<b>40,944</b>	<b>17,019</b>	<b>23,925</b>
<b>OTHER MAINTENANCE LABOR HOURS</b>	<b>48,279</b>	<b>72,203</b>	<b>(23,924)</b>
<b>TOTAL PRODUCTION MAINTENANCE LABOR HOURS</b>	<b>89,223 *</b>	<b>89,222 *</b>	<b>1 *</b>

\* difference due to rounding

## EXHIBIT 2

### MAUI DIVISION SUMMARY

#### Production Maintenance Labor Hours

NARUC	Labor Hours, 2007 Budget	Illustrative Normalized Test Year 2007	Difference 2007 Budget & Illustrative Normalized Test Year 2007
500	276	276	0
505	24	24	0
506	3,550	3,570	-20
511	1,694	1,694	0
512	16,322	14,505	1,817
513	7,801	8,678	-877
514	5,930	5,996	-66
546	319	339	-20
548	60	60	0
552	2,171	2,184	187
553	48,078	48,900	-822
554	2,798	2,996	-198
<b>TOTAL MAUI DIVISION</b>	<b>89,223 *</b>	<b>89,222 *</b>	<b>1 *</b>

\* difference due to rounding

**EXHIBIT 3  
MAUI DIVISION  
NARUC DETAILS**

**Production Maintenance Labor Hours**

Data from CA-IR-1, Labor Input Sheets (submitted 5/2/07)

Line Item	NARUC	RA	Act	Loc	Proj	EE	Labor Class	Labor Hours, 2007 Budget	Difference 2007 Budget & Illustrative Normalized Test Year 2007	Illustrative Normalized Test Year 2007
Comply ongoing Waste Water	500	MGB	876	NST	NMGZZZZZ	150	GBMANT	96	0	96
Solid waste issues & removal	500	MGB	877	NST	NMGZZZZZ	150	GBSUPV	36	0	36
Comply Haz Waste (PR000326)	500	MGB	877	NST	NMGZZZZZ	150	GBMANT	144	0	144
<b>TOTAL</b>	<b>500</b>							<b>276</b>	<b>0</b>	<b>276</b>
Monitor Plant/Opnrt Performance-TurboGen STM	505	MGC	246	MST	NMGZZZZZ	150	GCSUPV	24	0	24
Develop & Maintain Policies & Procedures (PR011021)	506	MGB	240	NST	NMGZZZZZ	150	GBSUPV	1,014	0	1,014
Planning	506	MGB	240	NST	NMGZZZZZ	150	GBMANT	120	0	120
Develop & Maintain Policies & procedures MST	506	MGC	240	NST	NMGZZZZZ	150	GCSUPV	228	20	248
Budget	506	MGB	701	MPO	NMGZZZZZ	150	GBSUPV	12	0	12
EVANS Attend Training (PR000330)	506	MGB	789	MPO	NMGZZZZZ	150	GBSUPV	36	0	36
Attend Training (environmental) PR000369	506	MGE	789	MPO	NMGZZZZZ	150	GESUPV	12	0	12
Fire Protection	506	MGB	796	NST	NMGZZZZZ	150	GBMANT	72	0	72
Manage BU & Other Labor Agreements (PR010406)	506	MGD	805	MPO	NMGZZZZZ	150	GDMANT	180	0	180
Security issues & maintenance	506	MGB	933	NST	NMGZZZZZ	150	GBSUPV	24	0	24
Security Maintenance	506	MGB	933	NST	NMGZZZZZ	150	GBMANT	48	0	48
Provide & Manage Services-Custodial (PR000514)	506	MGB	934	NST	NMGZZZZZ	150	GBMANT	1,756	0	1,756
Clean up	506	MGB	934	NST	NMGZZZZZ	150	GBMANT	48	0	48
<b>TOTAL</b>	<b>506</b>							<b>3,550</b>	<b>20</b>	<b>3,570</b>
Maint Sm Common Struct-Corr (PR000107)	511	MGB	265	NST	NMGZZZZZ	150	GBSUPV	12	0	12
Maint Sm Common Struct-Corr (PR000108)	511	MGB	265	NTF	NMGZZZZZ	150	GBSUPV	12	0	12
Maint. Sta. Com. Struct. & Sys- Black Start-Corrective	511	MGB	265	NST	NMGZZZZZ	150	GBMANT	580	0	580
Mechanic-Maint. Sta. Com. Struct & Sys-Corrective	511	MGB	265	NST	NMGZZZZZ	150	GBMANT	946	0	946
Maint. Fuel Feed Sys.-corrective	511	MGB	271	NTF	NMGZZZZZ	150	GBMANT	144	0	144
<b>TOTAL</b>	<b>511</b>							<b>1,694</b>	<b>0</b>	<b>1,694</b>
K1 Overhaul-Blr. Maint. Supv. labor 257	512	MGB	257	N01	M0000168	150	GBSUPV	96	0	96
K2 Overhaul-Blr. Maint. Supv. labor 257	512	MGB	257	N02	M0000146	150	GBSUPV	94	0	94
K3 Boiler Overhaul-Blr. Maint. Supv 257	512	MGB	257	N03	M0000170	150	GBSUPV	117	0	117
K4 Boiler Overhaul-Maint. Supv. labor 257	512	MGB	257	N04	M0000172	150	GBSUPV	93	0	93
K1 Overhaul-Blr. Maint. labor 257	512	MGB	257	N01	M0000168	150	GBMANT	1,120	0	1,120
K2 Overhaul-Blr. Maint. labor 257	512	MGB	257	N02	M0000146	150	GBMANT	1,088	0	1,088
K3 Boiler Overhaul-Blr. Maint. labor 257	512	MGB	257	N03	M0000170	150	GBMANT	1,360	0	1,360
K4 Boiler Overhaul-Blr Maint labor 257	512	MGB	257	N04	M0000172	150	GBMANT	1,088	0	1,088
M15 (M14 HRSG HR1)- CT Supv	512	MGC	257	M15	M0000047	150	GCSUPV	87	-72	15
M15 (M16 HRSG HR2)Annual Maintenance- CT Supv	512	MGC	257	M15	M0000047	150	GCSUPV	87	-72	15
M15 (M16 HRSG HR2) Annual Maint-CT Maint Labor	512	MGC	257	M15	M0000047	150	GCMANT	174	-145	29
M15(M14 HRSG HR1)Annual Overhaul - CT Maint labor	512	MGC	257	M15	M0000047	150	GCMANT	174	-145	29
Maintain Boiler & related Equip-Prev HRSG	512	MGC	257	M15	NMGZZZZZ	150	GCMANT	11	1	12
Air Systems	512	MGC	257	MST	NMGZZZZZ	150	GCMANT	22	2	24
M15 (M14 HRSG HR1)Oshl - GD Supv	512	MGD	257	M15	M0000047	150	GDSUPV	24	-20	4
M15 (M16 HRSG HR2)Annual Maintenance-Supv	512	MGD	257	M15	M0000047	150	GDSUPV	24	-20	4
M15 (M14 HRSG HR1)Annual Overhaul-Diesel Maint labor	512	MGD	257	M15	M0000047	150	GDMANT	777	-647	130
M15 (M16 HRSG HR2) Annual Maintenance-Diesel Maint labor	512	MGD	257	M15	M0000047	150	GDMANT	777	-647	130
K1 Overhaul-Blr. MGD Lbr 257	512	MGD	257	N01	M0000168	150	GDMANT	160	0	160
K4 Boiler Overhaul-Blr MGD (257)	512	MGD	257	N04	M0000172	150	GDMANT	466	0	466
M15 (M14 HRSG HR1)Overhaul-Electrical Supv	512	MGE	257	M15	M0000047	150	GESUPV	24	-20	4
M15 (M16 HRSG HR2)Overhaul-Electrical Supv	512	MGE	257	M15	M0000047	150	GESUPV	24	-20	4
K1 Boiler Overhaul-Elec Maint Supv 257	512	MGE	257	N01	M0000168	150	GESUPV	20	0	20
K2 Boiler Overhaul-Elec Maint Supv 257	512	MGE	257	N02	M0000146	150	GESUPV	16	0	16
K3 Boiler Overhaul-Elec Maint Supv 257	512	MGE	257	N03	M0000170	150	GESUPV	16	0	16
K4 Boiler Overhaul-Elec Maint Supv 257	512	MGE	257	N04	M0000172	150	GESUPV	16	0	16
M15 (M14 HRSG HR1)Overhaul-Electrical Maint labor	512	MGE	257	M15	M0000047	150	GEMANT	666	-555	111
M15 (M16 HRSG HR2)Overhaul-Electrical Maint labor	512	MGE	257	M15	M0000047	150	GEMANT	666	-555	111
K1 Boiler Overhaul-Electrical Maint labor	512	MGE	257	N01	M0000168	150	GEMANT	696	0	696
K2 Boiler Overhaul-Elec Maint labor (257)	512	MGE	257	N02	M0000146	150	GEMANT	666	0	666
K3 Boiler Overhaul-Elec Maint labor	512	MGE	257	N03	M0000170	150	GEMANT	800	0	800
K4 Boiler Overhaul-Elec Maint labor	512	MGE	257	N04	M0000172	150	GEMANT	799	0	799
Maint Boiler Plt & Related Eq-Corrective	512	MGB	259	N01	NMGZZZZZ	150	GBSUPV	12	0	12
Maint Boiler Plt & Related Eq-Corr	512	MGB	259	N02	NMGZZZZZ	150	GBSUPV	12	0	12
Maint Boiler Plt & Related Eq-Corr	512	MGB	259	N03	NMGZZZZZ	150	GBSUPV	12	0	12
Maint Boiler Plt & Related Eq-Corr	512	MGB	259	N04	NMGZZZZZ	150	GBSUPV	12	0	12
Maint Boiler Plant & Related Eq-Corrective	512	MGB	259	N01	NMGZZZZZ	150	GBMANT	671	0	671
Maint. Boiler Plant & Related Eq.-Corrective	512	MGB	259	N02	NMGZZZZZ	150	GBMANT	671	0	671
Maint Boiler Plant & Related Eq.-Corrective	512	MGB	259	N04	NMGZZZZZ	150	GBMANT	673	0	673
Maint. Boiler Plant & Related Eq.-Corrective	512	MGB	259	N04	NMGZZZZZ	150	GBMANT	673	0	673
Maintain Boiler & related Equip-Corr HRSG	512	MGC	259	M15	NMGZZZZZ	150	GCMANT	176	16	192
Air Systems	512	MGC	259	MST	NMGZZZZZ	150	GCMANT	84	7	91
M15 Boiler	512	MGD	259	M15	NMGZZZZZ	150	GDMANT	24	1,075	1,099

Production Maintenance Labor Hours

Data from CA-IR-1, Labor Input Sheets (submitted 5/2/07)

Line Item	NARUC	RA	Act	Loc	Proj	EE	Labor Class	Labor Hours	Difference 2007 Budget & Illustrative Normalized Test	Illustrative Normalized
								2007 Budget	Year 2007	Test Year 2007
Maint. Boiler Plant & Related Eq.-Corrective	512	MGE	259	M15	NMGZZZZZ	150	GEMANT	144	0	144
Maint. Boiler Plant & Related Eq.-Corrective	512	MGE	259	M18	NMGZZZZZ	150	GEMANT	144	0	144
Maint. Boiler Plant & Related Eq.-Corrective	512	MGE	259	N01	NMGZZZZZ	150	GEMANT	180	0	180
Maint. Boiler & Related Eq.-Corrective	512	MGE	259	N02	NMGZZZZZ	150	GEMANT	180	0	180
Maint. Boiler & Related Eq.-Corrective	512	MGE	259	N03	NMGZZZZZ	150	GEMANT	180	0	180
Maint. Boiler & Related Eq.-Corrective	512	MGE	259	N04	NMGZZZZZ	150	GEMANT	180	0	180
Maint. Fuel Feed System Corrective	512	MGE	271	NST	NMGZZZZZ	150	GEMANT	46	0	46
<b>TOTAL</b>	<b>512</b>							<b>16,322</b>	<b>1,817</b>	<b>14,505</b>
K1 Overhaul-Blr. Maint. Supv. labor 260	513	MGB	260	N01	M0000168	150	GBSUPV	96	0	96
K2 Overhaul-Blr. Maint. Supv. labor 260	513	MGB	260	N02	M0000146	150	GBSUPV	40	0	40
K3 Boiler Overhaul-Blr. Maint. Supv 260	513	MGB	260	N03	M0000170	150	GBSUPV	50	0	50
K4 Boiler Overhaul-Maint. Supv. labor 260	513	MGB	260	N04	M0000172	150	GBSUPV	40	0	40
K1 Overhaul-Blr. Maint. labor 260	513	MGB	260	N01	M0000168	150	GBMANT	1,120	0	1,120
K2 Overhaul-Blr. Maint. labor 260	513	MGB	260	N02	M0000146	150	GBMANT	466	0	466
K3 Boiler Overhaul-Blr. Maint. labor 260	513	MGB	260	N03	M0000170	150	GBMANT	583	0	583
K4 Boiler Overhaul-Blr Maint labor 260	513	MGB	260	N04	M0000172	150	GBMANT	466	0	466
M15 Annual Overhaul - CT SUPV	513	MGC	260	M15	M0000047	150	GCSUPV	24	-20	4
Maint Steam TurboGenerator & Rel Eq-Prev	513	MGC	260	M15	NMGZZZZZ	150	GCSUPV	48	0	48
M15 Annual Overhaul - CT Maint labor	513	MGC	260	M15	M0000047	150	GCMANT	48	-40	8
Maintain Steam TurboGenerator & related Equip-Prev	513	MGC	260	M15	NMGZZZZZ	150	GCMANT	231	46	277
M18 Maint Steam Turbo Gen	513	MGC	260	M18	NMGZZZZZ	150	GCMANT	34	10	44
M15 Annual Overhaul - GD MAINT Lbr	513	MGD	260	M15	M0000047	150	GDMANT	48	-40	8
K1 Overhaul-Blr. MGD Lbr 260	513	MGD	260	N01	M0000168	150	GEMANT	160	0	160
K4 Boiler Overhaul-Blr MGD 260	513	MGD	260	N04	M0000172	150	GEMANT	200	0	200
M15 Annual Overhaul - GE SUPV Lbr	513	MGE	260	M15	M0000047	150	GESUPV	16	-13	3
K1 Boiler Overhaul-Elec Maint Supv 260	513	MGE	260	N01	M0000168	150	GESUPV	20	0	20
K2 Boiler Overhaul-Elec Maint Supv 260	513	MGE	260	N02	M0000146	150	GESUPV	16	0	16
K3 Boiler Overhaul-Elec Maint Supv 260	513	MGE	260	N03	M0000170	150	GESUPV	16	0	16
K4 Boiler Overhaul-Elect Maint Supv 260	513	MGE	260	N04	M0000172	150	GESUPV	16	0	16
M15 Annual Overhaul - GE MAINT labor	513	MGE	260	M15	M0000047	150	GEMANT	200	-167	33
K1 Steam Turbine Overhaul-Elec Maint labor	513	MGE	260	N01	M0000146	150	GEMANT	504	0	504
K2 Steam Turbine Overhaul-Elec Maint labor (260)	513	MGE	260	N02	M0000146	150	GEMANT	444	0	444
K3 Steam Turbine Overhaul-Elec Maint labor	513	MGE	260	N03	M0000170	150	GEMANT	532	0	532
K4 Steam Turbine Overhaul-Elec Maint labor (260)	513	MGE	260	N04	M0000172	150	GEMANT	533	0	533
Maint. Steam Gen. & Related Eq.-Corrective	513	MGB	262	N01	NMGZZZZZ	150	GBMANT	187	0	187
Maint. Steam Gen. & Related Eq.-Corrective	513	MGB	262	N02	NMGZZZZZ	150	GBMANT	187	0	187
Maint. Steam Gen. & Related Eq.-Corrective	513	MGB	262	N03	NMGZZZZZ	150	GBMANT	187	0	187
Maintain Steam TurboGenerator & related Equip-Corr	513	MGC	262	M15	NMGZZZZZ	150	GCMANT	192	16	208
M18 Maint Steam Turbo Gen	513	MGC	262	M18	NMGZZZZZ	150	GCMANT	34	10	44
M15 turbine	513	MGD	262	M15	NMGZZZZZ	150	GDMANT	12	1,075	1,087
Maint. Steam T/G & Related Eq.-Corrective	513	MGE	262	M15	NMGZZZZZ	150	GEMANT	120	0	120
Maint. Steam T/G & Related Eq.-Corrective	513	MGE	262	M18	NMGZZZZZ	150	GEMANT	120	0	120
Maint. Steam Gen. & Related Eq.-Corrective	513	MGE	262	N01	NMGZZZZZ	150	GEMANT	156	0	156
Maint. Steam Gen. & Related Eq.-Corrective	513	MGE	262	N02	NMGZZZZZ	150	GEMANT	156	0	156
Maint. Steam Gen. & Related Eq.-Corrective	513	MGE	262	N03	NMGZZZZZ	150	GEMANT	156	0	156
Maint. Steam Gen. & Related Eq.-Corrective	513	MGE	262	N04	NMGZZZZZ	150	GEMANT	156	0	156
<b>TOTAL</b>	<b>513</b>							<b>7,801</b>	<b>877</b>	<b>8,678</b>
Plan/Schedule Maintenance - MST	514	MGC	256	MST	NMGZZZZZ	150	GCSUPV	268	40	308
Plan/Schedule maint.	514	MGC	256	MST	NMGZZZZZ	150	GCMANT	96	8	104
Maint. Sta. Common Misc. Eq.-Prev. KPP	514	MGE	266	NST	NMGZZZZZ	150	GESUPV	87	3	90
Maint. Sta. Common Misc. Eq.-Preventive	514	MGE	266	NST	NMGZZZZZ	150	GEMANT	372	0	372
Maint. Sta. Common Misc. Eq.-Corrective	514	MGB	268	NST	NMGZZZZZ	150	GBMANT	592	0	592
Mechanic-Maint. Sta. Common Misc. Eq.-Corrective	514	MGB	268	NST	NMGZZZZZ	150	GBMANT	946	0	946
Maint. Sta. Common Misc. Eq.-Corrective PR000420	514	MGE	268	NST	NMGZZZZZ	150	GESUPV	348	0	348
Maintain Station Common Misc-Equip-Corr	514	MGE	268	NST	NMGZZZZZ	150	GEMANT	60	0	60
Company Meetings	514	MGE	720	MPM	NMGZZZZZ	150	GEMANT	84	0	84
Process Payroll (PR000515)	514	MGB	777	MPM	NMGZZZZZ	150	GBSUPV	84	0	84
Process Payroll (Apolonio Rulona) (PR000515)	514	MGB	777	MPM	NMGZZZZZ	150	GBMANT	338	0	338
Process Payroll	514	MGC	777	MPM	NMGZZZZZ	150	GCSUPV	48	0	48
Process Payroll	514	MGC	777	MPM	NMGZZZZZ	150	GCMANT	72	6	78
Process Payroll	514	MGD	777	MPM	NMGZZZZZ	150	GDSUPV	48	0	48
Process Payroll PR010420	514	MGE	777	MPM	NMGZZZZZ	150	GESUPV	145	0	145
Process Payroll (Maintenance)	514	MGE	777	MPM	NMGZZZZZ	150	GEMANT	264	0	264
Employee Evaluations	514	MGD	785	MPM	NMGZZZZZ	150	GDSUPV	40	0	40
Performance Appraisals	514	MGE	785	MPM	NMGZZZZZ	150	GESUPV	16	0	16
Employee Evaluations (PR011029)	514	MGB	787	MPM	NMGZZZZZ	150	GBSUPV	12	0	12
EVANS Attend Training (PR007880)	514	MGB	789	MPM	NMGZZZZZ	150	GBSUPV	12	0	12
Attend Training (PR007880)	514	MGB	789	MPM	NMGZZZZZ	150	GBMANT	12	0	12
Attend Training (PR007880)	514	MGB	789	MPM	NMGZZZZZ	150	GBMATL	12	0	12
Mechanic-Attend Training	514	MGB	789	MPM	NMGZZZZZ	150	GBMANT	24	0	24
MGB Attend Training	514	MGB	789	MPM	NMGZZZZZ	150	GBMANT	240	0	240
Attend Training (HAZWOPER)	514	MGC	789	MPM	NMGZZZZZ	150	GCMANT	84	10	94
Attend Training (PR011000)	514	MGD	789	MPM	NMGZZZZZ	150	GDSUPV	48	-1	47
Attend Training (PR010405)	514	MGD	789	MPM	NMGZZZZZ	150	GDMANT	12	0	12

Production Maintenance Labor Hours

Data from CA-IR-1, Labor Input Sheets (submitted 5/2/07)

Line Item	NARUC	RA	Act	Loc	Proj	EE	Labor Class	Labor Hours	Difference 2007 Budget & Illustrative Normalized Test Year 2007	Illustrative Normalized Test Year 2007
								2007 Budget		
Attend Training	514	MGD	789	MPM	NMGZZZZZ	150	GDMANT	200	0	200
Attend Training	514	MGE	789	MPM	NMGZZZZZ	150	GESUPV	48	0	48
Attend Training	514	MGE	789	MPM	NMGZZZZZ	150	GEMANT	216	0	216
Electrician-Attend Training	514	MGE	789	MPM	NMGZZZZZ	150	GEMANT	24	0	24
EVANS Attend Safety Training (PR011022)	514	MGB	797	MPM	NMGZZZZZ	150	GBSUPV	24	0	24
Safety Training (PR011022)	514	MGB	797	MPM	NMGZZZZZ	150	GBSUST	12	0	12
Safety Training (PR011022)	514	MGB	797	MPM	NMGZZZZZ	150	GBMATL	12	0	12
Mechanic-Attend Safety Training (PR011022)	514	MGB	797	MPM	NMGZZZZZ	150	GBMANT	12	0	12
MGB Attend Safety Training (PR011022)	514	MGB	797	MPM	NMGZZZZZ	150	GBMANT	192	0	192
Attend Safety Training	514	MGC	797	MPM	NMGZZZZZ	150	GCSUPV	12	0	12
Attend Training (SAFETY)	514	MGC	797	MPM	NMGZZZZZ	150	GCMANT	15	0	15
Attend Safety Training (PR011001)	514	MGD	797	MPM	NMGZZZZZ	150	GDSUPV	12	0	12
Attend Safety Training	514	MGD	797	MPM	NMGZZZZZ	150	GDMANT	175	0	175
Attend Safety Training PR010422	514	MGE	797	MPM	NMGZZZZZ	150	GESUPV	12	0	12
Attend Safety Training	514	MGE	797	MPM	NMGZZZZZ	150	GEMANT	144	0	144
Electrician-Attend Safety Training	514	MGE	797	MPM	NMGZZZZZ	150	GEMANT	12	0	12
Process Invoices & Other Payments (PR010587)	514	MGD	843	MPM	NMGZZZZZ	150	GDMANT	228	0	228
Wastewater issues	514	MGB	876	NWW	NMGZZZZZ	150	GBSUPV	24	0	24
Waste Water Compliance	514	MGB	876	NWW	NMGZZZZZ	150	GBMANT	48	0	48
KPP Water Water	514	MGE	876	NWW	NMGZZZZZ	150	GEMANT	144	0	144
<b>TOTAL</b>	<b>514</b>							<b>5,930</b>	<b>66</b>	<b>5,996</b>
Develop & Maintain Policies & Procedures MNS	546	MGC	240	MNS	NMGZZZZZ	150	GCSUPV	228	20	248
Staff Meetings (PR010842)	546	MGE	240	MNS	NMGZZZZZ	150	GESUPV	10	0	10
Air testing, source testing, CEMS	546	MGC	875	MNS	NMGZZZZZ	150	GCSUPV	48	0	48
CEMS	546	MGC	875	MNS	NMGZZZZZ	150	GCMANT	22	0	22
Env. Haz-Waste - Oil	546	MGC	877	MNS	NMGZZZZZ	150	GCMANT	11	0	11
<b>TOTAL</b>	<b>546</b>							<b>319</b>	<b>20</b>	<b>339</b>
Monitor Plant/Oprnl Perform-NonSteam/Other	548	MGC	247	MNS	NMGZZZZZ	150	GCSUPV	60	0	60
									0	
General Plant Maintenance	552	MGC	263	MNS	NMGZZZZZ	150	GCMANT	24	0	24
General Plant Maintenance	552	MGC	265	MNS	NMGZZZZZ	150	GCMANT	24	0	24
Maint Stn Common Struct(s) & Sys-Corr	552	MGD	265	MNS	NMGZZZZZ	150	GDMANT	546	0	546
Electrician-Maint Stn Common Struct(s) & Sys-Corr	552	MGE	265	MNS	NMGZZZZZ	150	GEMANT	940	-60	880
Maint Stn Common Struct(s) & Sys-Corr	552	MGE	265	MNS	NMGZZZZZ	150	GEMANT	602	-151	451
Maintain Fuel Feed System- Preventive	552	MGC	269	MNS	NMGZZZZZ	150	GCMANT	144	24	168
Maintain Fuel Feed System	552	MGC	271	MNS	NMGZZZZZ	150	GCMANT	22	0	22
Maintain Fuel Feed System-Corrective	552	MGD	271	MNS	NMGZZZZZ	150	GDMANT	21	0	21
Maint. Fuel Feed Sys.-Corrective	552	MGE	271	MNS	NMGZZZZZ	150	GEMANT	48	0	48
<b>TOTAL</b>	<b>552</b>							<b>2,371</b>	<b>-187</b>	<b>2,184</b>
Common Prev	553	MGC	266	MNS	NMGZZZZZ	150	GCMANT	156	20	176
Maint Stn Common Struct(s) & Sys-Prev	553	MGD	266	MNS	NMGZZZZZ	150	GDMANT	14	120	134
Maint. Sta. Common Misc. Eq.-Preventive	553	MGC	266	MNS	NMGZZZZZ	150	GEMANT	48	654	702
Maint Common Equip/tools	553	MGE	268	MNS	NMGZZZZZ	150	GDMANT	18	0	18
Maint. Sta. Common Misc. Eq.-Corrective PR000217	553	MGE	268	MNS	NMGZZZZZ	150	GESUPV	518	-28	490
Hana Work	553	MGE	268	MHN	NMGZZZZZ	150	GEMANT	120	0	120
Maintain Station Common Misc Equip-Corr	553	MGE	268	MNS	NMGZZZZZ	150	GEMANT	720	-170	550
M16 Major Overhaul-CT Maint labor SUPV	553	MGC	272	M16	M0000056	150	GCSUPV	72	-48	24
M17 Hot Section - CT Supv	553	MGC	272	M17	M0000356	150	GCSUPV	40	-19	21
M19 Hot Section - CT Supv	553	MGC	272	M19	M0000357	150	GCSUPV	40	-22	18
Maint Combustion Turbine & Elec Eq-Prev	553	MGC	272	M14	NMGZZZZZ	150	GCSUPV	48	20	68
Maint Combustion Turbine & Elec-Eq-Prev	553	MGC	272	M16	NMGZZZZZ	150	GCSUPV	48	20	68
Maint Combustion Turbine & Elec Eq-Prev	553	MGC	272	M17	NMGZZZZZ	150	GCSUPV	48	24	72
Maint Combustion Turbine & Elec Eq-Prev	553	MGC	272	M19	NMGZZZZZ	150	GCSUPV	48	24	72
M16 Major Overhaul-CT Maint labor	553	MGC	272	M16	M0000056	150	GCMANT	48	-32	16
M17 Hot Section - CT Mant	553	MGC	272	M17	M0000356	150	GCMANT	80	-37	43
M19 Hot Section - CT Mant	553	MGC	272	M19	M0000357	150	GCMANT	80	-45	35
Maintain Combustion Turbine & Electrical Eq.-Prev	553	MGC	272	M14	NMGZZZZZ	150	GCMANT	132	22	154
Maintain Combustion Turbine & Electrical Eq.-Prev	553	MGC	272	M16	NMGZZZZZ	150	GCMANT	132	11	143
Maintain Combustion Turbine & Electrical Eq.-Prev	553	MGC	272	M17	NMGZZZZZ	150	GCMANT	132	11	143
Maintain Combustion Turbine & Electrical Eq.-Prev	553	MGC	272	M19	NMGZZZZZ	150	GCMANT	132	11	143
M16 Major Overhaul-Diesel Maint labor SUPV	553	MGD	272	M16	M0000056	150	GDSUPV	16	-11	5
M16 Major Overhaul-Diesel Maint labor	553	MGD	272	M16	M0000056	150	GDMANT	96	-65	31
M17 Hot Section Overhaul-Diesel Maint labor	553	MGD	272	M17	M0000356	150	GDMANT	160	-74	86
M19 Hot Section Overhaul-Diesel Maint labor	553	MGD	272	M19	M0000357	150	GDMANT	160	-90	70
M14,16,17,19 CT Mant	553	MGD	272	M14	NMGZZZZZ	150	GDMANT	48	1,083	1,131
M16 Major Overhaul-Electrical labor SUPV	553	MGE	272	M16	M0000056	150	GESUPV	16	-11	5
M17 Hot Section - Elect Supv	553	MGE	272	M17	M0000356	150	GESUPV	8	-4	4
M19 Hot Section - Elect Supv	553	MGE	272	M19	M0000357	150	GESUPV	8	-4	4
M16 Major Overhaul-Electrical labor	553	MGE	272	M16	M0000056	150	GDMANT	48	-22	26
M17 Hot Section Overhaul-Electrical Maint labor	553	MGE	272	M17	M0000356	150	GEMANT	48	-27	21
M19 Hot Section Overhaul-Electrical Maint labor	553	MGE	272	M19	M0000357	150	GEMANT	48	-27	21
Maint. C/T Generator & Elect. Eq.-Prev	553	MGE	272	M14	NMGZZZZZ	150	GEMANT	36	720	756
Maint. C/T Generator & Elect. Eq.-Prev	553	MGE	272	M16	NMGZZZZZ	150	GEMANT	36	720	756

Production Maintenance Labor Hours

Data from CA-IR-1, Labor Input Sheets (submitted 5/2/07)

Line Item	NARUC	RA	Act	Loc	Proj	EE	Labor Class	Labor Hours	Difference 2007 Budget & Illustrative Normalized Test	Illustrative Normalized
								2007 Budget	Year 2007	Test Year 2007
Maint. C/T Generator & Elect. Eq.-Prev	553	MGE	272	M17	NMGZZZZZ	150	GEMANT	36	720	756
Maint. C/T Generator & Elect. Eq.-Prev	553	MGE	272	M19	NMGZZZZZ	150	GEMANT	36	720	756
Maint Combustion Turbine & Elec Eq-Corr	553	MGC	274	M14	NMGZZZZZ	150	GCSUPV	24	0	24
Maint Combustion Turbine & Elec Eq-Corr	553	MGC	274	M16	NMGZZZZZ	150	GCSUPV	24	0	24
Maint Combustion Turbine & Elec Eq-Corr	553	MGC	274	M17	NMGZZZZZ	150	GCSUPV	24	0	24
Maint Combustion Turbine & Elec Eq-Corr	553	MGC	274	M19	NMGZZZZZ	150	GCSUPV	24	0	24
Maintain Combustion Turbine & Electrical Eq.-Corr	553	MGC	274	M14	NMGZZZZZ	150	GCMANT	60	8	68
Maintain Combustion Turbine & Electrical Eq.-Corr	553	MGC	274	M16	NMGZZZZZ	150	GCMANT	60	8	68
Maintain Combustion Turbine & Electrical Eq.-Corr	553	MGC	274	M17	NMGZZZZZ	150	GCMANT	60	8	68
Maintain Combustion Turbine & Electrical Eq.-Corr	553	MGC	274	M19	NMGZZZZZ	150	GCMANT	60	8	68
M14,16,17,19 CT Corr	553	MGD	274	M17	NMGZZZZZ	150	GDMANT	48	0	48
CT units	553	MGE	274	M14	NMGZZZZZ	150	GESUPV	48	114	162
Maint. C/T Generator & Elect. Eq.-Corrective	553	MGE	274	M14	NMGZZZZZ	150	GEMANT	192	-33	159
Maint. C/T Generator & Elect. Eq.-Corrective	553	MGE	274	M16	NMGZZZZZ	150	GEMANT	192	0	192
Maint. C/T Generator & Elect. Eq.-Corrective	553	MGE	274	M17	NMGZZZZZ	150	GEMANT	192	-33	159
Maint. C/T Generator & Elect. Eq.-Corrective	553	MGE	274	M19	NMGZZZZZ	150	GEMANT	192	0	192
M12 Overhaul-MGB Labor	553	MGB	275	M12	M0000050	150	GBMANT	256	0	256
M3 Ovht - Diesel Supv	553	MGD	275	M03	M0000151	150	GDSUPV	15	-15	0
M4 Overhaul-Dies Maint Supv	553	MGD	275	M04	M0000065	150	GDSUPV	96	-93	3
M5 Overhaul-Dies Maint Supv	553	MGD	275	M05	M0000066	150	GDSUPV	96	-93	3
M6 Overhaul-Dies Maint Supv	553	MGD	275	M06	M0000022	150	GDSUPV	96	-93	3
M8 Overhaul-Dies Maint Supv	553	MGD	275	M08	M0000067	150	GDSUPV	96	-83	13
M12 Overhaul-Supv labor	553	MGD	275	M12	M0000050	150	GDSUPV	144	73	217
M3 Ovht - Diesel Maint Labor	553	MGD	275	M03	M0000151	150	GDMANT	1,080	-1,078	2
M4 Overhaul-Diesel Maint labor	553	MGD	275	M04	M0000065	150	GDMANT	6,144	-5,941	203
M5 Overhaul-Diesel Maint labor	553	MGD	275	M05	M0000066	150	GDMANT	6,144	-5,941	203
M6 Overhaul-Diesel Maint labor	553	MGD	275	M06	M0000022	150	GDMANT	6,144	-5,941	203
M8 Overhaul-Diesel Maint labor	553	MGD	275	M08	M0000067	150	GDMANT	6,144	-5,327	817
M12 Overhaul-Diesel Maint labor	553	MGD	275	M12	M0000050	150	GDMANT	8,128	4,145	12,273
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M01	NMGZZZZZ	150	GDMANT	6	1,075	1,081
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M02	NMGZZZZZ	150	GDMANT	6	1,075	1,081
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M03	NMGZZZZZ	150	GDMANT	7	1,075	1,082
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M04	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M05	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M06	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M07	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M08	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M09	NMGZZZZZ	150	GDMANT	16	1,075	1,091
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M10	NMGZZZZZ	150	GDMANT	80	1,030	1,110
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M11	NMGZZZZZ	150	GDMANT	35	1,075	1,110
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M12	NMGZZZZZ	150	GDMANT	35	1,075	1,110
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	M13	NMGZZZZZ	150	GDMANT	35	1,075	1,110
Hana unit 1 Diesel maint Prev	553	MGD	275	MH1	NMGZZZZZ	150	GDMANT	8	1,075	1,083
Hana unit 2 diesel maint Prev	553	MGD	275	MH2	NMGZZZZZ	150	GDMANT	8	1,075	1,083
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	MX1	NMGZZZZZ	150	GDMANT	8	1,075	1,083
Maint Int Combust Engine & Rel Eq-Prev	553	MGD	275	MX2	NMGZZZZZ	150	GDMANT	8	1,075	1,083
M3 Ovht - Elec Supv	553	MGE	275	M03	M0000151	150	GESUPV	16	-16	0
M4 Diesel Overhaul-Elec Maint Supv	553	MGE	275	M04	M0000065	150	GESUPV	40	-39	1
M5 Diesel Overhaul-Elec Maint Supv	553	MGE	275	M05	M0000066	150	GESUPV	40	-39	1
M6 Diesel Overhaul-Elec Maint Supv	553	MGE	275	M06	M0000022	150	GESUPV	40	-39	1
M8 Diesel Overhaul-Elec Maint Supv	553	MGE	275	M08	M0000067	150	GESUPV	40	-39	1
M12 Overhaul-Elec Supv labor	553	MGE	275	M12	M0000050	150	GESUPV	64	33	97
M3 Ovht - Elec Maint Labor	553	MGE	275	M03	M0000151	150	GEMANT	160	-160	0
M4 Overhaul-Electrical Maint labor	553	MGE	275	M04	M0000065	150	GEMANT	768	-743	25
M5 Overhaul-Electrical Maint labor	553	MGE	275	M05	M0000066	150	GEMANT	768	-743	25
M6 Overhaul-Electrical Maint labor	553	MGE	275	M06	M0000022	150	GEMANT	768	-743	25
M8 Overhaul-Electrical Maint labor	553	MGE	275	M08	M0000067	150	GEMANT	1,440	-1,248	192
M12 Overhaul-Electrical Maint labor	553	MGE	275	M12	M0000050	150	GEMANT	1,249	635	1,884
Preventive Maint	553	MGE	275	M04	NMGZZZZZ	150	GEMANT	24	733	757
Preventive Maintenance	553	MGE	275	M11	NMGZZZZZ	150	GEMANT	24	720	744
Maint Int Combust Eng & Rel Eq-Corr	553	MGD	277	M01	NMGZZZZZ	150	GDSUPV	72	78	150
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M04	NMGZZZZZ	150	GDSUPV	72	78	150
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M08	NMGZZZZZ	150	GDSUPV	72	78	150
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M12	NMGZZZZZ	150	GDSUPV	72	78	150
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M01	NMGZZZZZ	150	GDMANT	53	0	53
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M02	NMGZZZZZ	150	GDMANT	32	0	32
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M03	NMGZZZZZ	150	GDMANT	49	0	49
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M04	NMGZZZZZ	150	GDMANT	80	0	80
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M05	NMGZZZZZ	150	GDMANT	95	0	95
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M06	NMGZZZZZ	150	GDMANT	95	0	95
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M07	NMGZZZZZ	150	GDMANT	41	0	41
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M08	NMGZZZZZ	150	GDMANT	81	0	81
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M09	NMGZZZZZ	150	GDMANT	145	0	145
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M10	NMGZZZZZ	150	GDMANT	122	0	122
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M11	NMGZZZZZ	150	GDMANT	170	0	170
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	M12	NMGZZZZZ	150	GDMANT	135	0	135

Production Maintenance Labor Hours

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Line Item	NARUC	RA	Act	Loc	Proj	EE	Labor Class	Labor Hours	Difference 2007 Budget & Illustrative Normalized Test	Illustrative Normalized
								2007 Budget	Year 2007	Test Year 2007
Hana unit 1 Diesel sp maint	553	MGD	277	MH1	NMG22222	150	GDMANT	7	0	7
Hana unit 2 diesel sp maint	553	MGD	277	MH2	NMG22222	150	GDMANT	8	0	8
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	MX1	NMG22222	150	GDMANT	32	0	32
Maint Int Combust Engine & Rel Eq-Corr	553	MGD	277	MX2	NMG22222	150	GDMANT	53	0	53
Diesel units	553	MGE	277	M10	NMG22222	150	GESUPV	24	11	138
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M01	NMG22222	150	GEMANT	48	0	48
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M02	NMG22222	150	GEMANT	48	0	48
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M03	NMG22222	150	GEMANT	48	0	48
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M04	NMG22222	150	GEMANT	101	0	101
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M05	NMG22222	150	GEMANT	105	0	105
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M06	NMG22222	150	GEMANT	112	0	112
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M07	NMG22222	150	GEMANT	112	0	112
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M08	NMG22222	150	GEMANT	104	0	104
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M09	NMG22222	150	GEMANT	90	0	90
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M10	NMG22222	150	GEMANT	132	0	132
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M11	NMG22222	150	GEMANT	132	0	132
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M12	NMG22222	150	GEMANT	187	0	187
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	M13	NMG22222	150	GEMANT	168	0	168
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	MX1	NMG22222	150	GEMANT	48	0	48
Maint. Int. Comb. Eng. & Related Eq.-Corrective	553	MGE	277	MX2	NMG22222	150	GEMANT	48	0	48
<b>TOTAL</b>	<b>553</b>							<b>48,078</b>	<b>823</b>	<b>48,900</b>
Develop Outage & Project Plans (PR010999)	554	MGD	255	MNS	NMG22222	150	GDSUPV	671	35	706
Meetings & planning	554	MGD	255	MNS	NMG22222	150	GDMANT	48	0	48
Plan/Schedule Maintenance - MNS	554	MGC	256	MNS	NMG22222	150	GCSUPV	268	60	328
Plan/Schedule maint.	554	MGC	256	MNS	NMG22222	150	GDMANT	96	8	104
Air Emission Issues-Water Treatment	554	MGC	875	MWT	NMG22222	150	GCSUPV	220	23	243
NOx Water Treatment	554	MGC	875	MWT	NMG22222	150	GDMANT	504	50	554
Air related	554	MGD	875	MWT	NMG22222	150	GDMANT	45	0	45
Maintain Glegg RO	554	MGE	875	MWT	NMG22222	150	GEMANT	406	-111	295
UIC - Waste Water Sys.	554	MGC	876	MWW	NMG22222	150	GCSUPV	96	12	108
Waste Water System - UIC	554	MGC	876	MWW	NMG22222	150	GDMANT	300	121	421
Maintain MPP WW	554	MGE	876	MWW	NMG22222	150	GEMANT	144	0	144
<b>TOTAL</b>	<b>554</b>							<b>2,798</b>	<b>198</b>	<b>2,996</b>
<b>MAUI DIVISION TOTAL</b>								<b>89,223</b>	<b>0</b>	<b>89,223</b>

CA-IR-223

**Ref: MECO T-5, page 38 (Grand Wailea CHP).**

According to Mr. Ribao, "...the CHP unit at the Grand Wailea ha(s) added to the responsibilities of this [MGE] group." Please provide the following:

- a. Explain whether the CHP unit at the Grand Wailea is a regulated, rate base included unit that is owned by MECO, or not.
- b. Provide a summary of test year revenues, labor expenses, non-labor expenses and rate base impacts associated with the CHP unit at the Grand Wailea by NARUC account.
- c. Are any production departments or other departmental labor hours chargeable to the owners of the CHP unit or to MECO below-the-line accounts?
- d. Please identify and describe any Commission applications, review or decisions rendered in connection with the CHP unit at the Grand Wailea.

**MECO Response:**

- a. The CHP unit at the Grand Wailea is not owned by MECO and is therefore not included in MECO's rate base. Any revenue and expenses arising from MECO's work with this unit is accounted for as non-regulated revenue and expense. The Direct Testimony statement "...the CHP unit at the Grand Wailea ha(s) added to the responsibilities of this [MGE] group." should not have been included because 1) the labor hours are minimal and 2) the revenue and expense associated with this unit is below the line.
- b. As indicated in the response to part a of this request, the CHP unit at the Grand Wailea is not owned by MECO and is therefore not included in MECO's rate base. MECO's test year estimate does not include any revenue or expenses or rate base amounts associated with this unit.
- c. Yes, MECO labor hours are chargeable to below-the-line account 417200 (Expenses-Non-Regulated Ops). MECO is reimbursed for its costs and such reimbursement is recorded as non-regulated revenue.



- d. There were no Commission involved applications, reviews or decisions rendered in connection with the CHP unit at the Grand Wailea. MECO did provide information concerning the research, development and demonstration project at the Grand Wailea in response to PUC information requests in Hawaiian Electric Company, Inc.'s response to the Informal Complaint No. IC-03-098, Complaint Against Hawaiian Electric Company, Inc. filed on August 5, 2003. The information included the source and amount of funds used to design, construct and install the unit, and copies of contracts.

CA-IR-224

**Ref: Response to CA-IR-96, Attachment 1 (MGA Overtime).**

Please provide the following:

- a. Explain the reasons why MGA Overtime is projected at much higher levels than any prior years 2001 through 2006.
- b. To the extent MGA overtime is compensated in the test year, through application of standard labor rates to the hours shown, what if any ratemaking adjustment would be appropriate to normalize MGA overtime costs?
- c. Why has the addition of the Renewable Energy Engineer position, as noted by T-5 at page 37, not had the effect of reducing projected MGA overtime?

**MECO Response:**

- a. The 2007 forecast for MGA Overtime is higher than recorded for 2001 through 2006, because the 2007 forecast includes both paid and unpaid overtime hours, whereas the recorded overtime for 2001 through 2006 includes only paid overtime hours. The 2007 budget for MGA includes 164 hours of paid overtime, and 2,204 hours of unpaid overtime. For the first five months of 2007, 132 hours of paid overtime (extra straight time) has been recorded in MGA. The MGA overtime forecast for 2007 test year was calculated by subtracting the total supply hours from the total demand hours for each labor class; however, it does not necessarily represent the compensated overtime hours projected. All employees under MGA except for two are merit or exempt employees. Merit or exempt employees are expected to fulfill their position responsibilities, regardless of the number of hours worked and are not entitled to extra compensation for additional hours worked.

- b. No ratemaking adjustment would be necessary to normalize MGA overtime costs. The calculation of standard labor rates for the 2007 operating budget took into account for each labor class all forecasted labor hours, whether paid or not.
- c. The addition of the Renewable Energy Engineer position has no impact on the overtime compensated hours, because this position is exempt; and, therefore, any hours worked in excess of the available hours per employee are considered straight time hours. Prior to the addition of this position, the work related to renewable energy was done by staff members from Power Supply and other departments. There is no reduction on the uncompensated overtime hours because the tasks have grown for exempt employees (merit staff) by a measure greater than any reduction resulting from the addition of the Renewable Energy Engineer.

CA-IR-225

**Ref: Response to CA-IR-82 (Expense by NARUC Comparisons).**

Please explain the reasons for significant differences between "Budget 2007" and prior years' expense levels for each of the following NARUC Accounts, indicating whether any (identified) MECO budget or MECO normalization adjustments impact the budgeted expense level and apparent variance relative to historical spending:

- a. Account 511 Maintenance of Structures non-labor \$338,950.
- b. Account 512 Maintenance of Boiler & FO Plant labor \$705,763.
- c. Account 512 Maintenance of Boiler & FO Plant Non-labor \$859,295.
- d. Account 553 Maintenance Electric Plant – Other Non-labor \$7,737,538.
- e. Account 553M Maintenance Electric Plant – Other Prod-Molokai Non-labor \$836,116.

**MECO Response:**

- a. Please refer to CA-IR-225 Attachment 1. Also, please refer to CA-IR-226.
- b. Please refer to CA-IR-225 Attachment 1.
- c. Please refer to CA-IR-225 Attachment 1.
- d. Please refer to CA-IR-225 Attachment 1. The test year estimate for this account is \$4,708,259, including a normalization reduction of \$3,029,279.
- e. Please refer to CA-IR-225 Attachment 1. The test year estimate for this account is \$331,060, including a normalization reduction of \$505,056.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**Variances by NARUC Accounts**

NAR Acct No.	NARUC Description	Average 2001-2006	Recorded 2006	Budget 2007	Test Year 2007	Variance, 2006 Recorded and Budget 2007		Attach No.
						\$	%	
a. 511	Maintenance of Structures Non-Labor	\$ 84,896	\$ 116,200	\$ 338,950	\$ 338,950	\$222,750	66	2
b. 512	Maintenance of Boiler & FO Plant Labor	\$ 442,579	\$ 424,055	\$ 705,763	\$ 705,763	\$281,708	40	3
c. 512	Maintenance of Boiler & FO Plant Non-Labor	\$ 434,872	\$ 707,126	\$ 879,295	\$ 879,295	\$172,169	20	3
d. 553	Maintenance Electric Plant - Other Non-Labor	\$ 4,269,445	\$4,253,689	\$7,737,538	\$4,708,259	\$454,570	10	4
e. 553M	Maintenance Electric Plant - Other Prod Molokai Non-Labor	\$ 251,361	\$ 160,063	\$ 836,116	\$ 331,060	\$170,997	52	5

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 511 - Maintenance of Structures - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct		<u>RECORDED</u>	<u>AVERAGE</u>	<u>BUDGET</u>	<u>07 Bud v. 01-06 Ave</u>		
<u>No.</u>	<u>Codeblock</u>	<u>2006</u>	<u>2001-2006</u>	<u>2007</u>	<u>\$ Diff</u>	<u>% Diff</u>	<u>Explanation</u>
511 Maintenance of Structures							
	Non-Labor	116,200	84,896	338,950	254,054	299	Please see explanations below
511	MGB265NSTNENMGZZZZZ501	314	13,332	166,360	153,028	1148	Currently, we are repairing/painting the Kahului tank farm equipment and structures (\$100K) and painting the stack duct supports (\$55K); also, please refer to CA-IR-226 for further details.
511	MGB271NTFNENMGZZZZZ501	0	1,999	125,000	123,001	6153	This is for the repair of the Kahului tank farm berm wall (\$125K); also, please refer to CA-IR-226 for further details.
511	MGB269NTFNENMGZZZZZ501	0	14,000	0	-14,000	-100	In 2004, added elastic coating (sheeting) to the three KPP fuel tanks to preserve installation.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 512 - Maintenance of Boiler & FO Plant - Labor and Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	<u>RECORDED</u> 2006	<u>AVERAGE</u> 2001-2006	<u>BUDGET</u> 2007	<u>07 Bud v. 01-06 Ave</u> \$ Diff % Diff		<u>Explanation</u>
<b>512 Maintenance of Boiler &amp; FO Plant</b>							
	<b>Labor</b>	<b>424,055</b>	<b>442,579</b>	<b>705,763</b>	<b>263,184</b>	<b>59</b>	<b>Please see explanations below</b>
512	MGC257M15NEM0000047150	3,809	3,355	18,491	15,136	451	This is for GC labor (522 hours for HRSG maintenance).
512	MGE257M15NEM0000047150	733	4,028	50,021	45,993	1142	This is for GE labor (1,532 hours for HRSG maintenance).
512	MGD257M15NEM0000047150	5,267	5,590	57,498	51,908	929	Each of the boilers are projected to be down for 2 weeks in 2007. This is for labor hours budgeted for GDMANT of 1,602 hours.
512	MGB257N01NEM00000168150	0	27,980	42,956	14,976	54	This is for direct labor hours relating to K1 Overhaul. The calculations were based on 2,240 hours for GBMANT and 192 hours for GBSUPV.
512	MGE257N01NEM00000168150	0	12,506	25,928	13,422	107	This is for direct labor hours relating to K1 Overhaul. The calculations were based on 1,240 for GE labor hours.
512	MGE257N02NEM00000146150	9,865	13,952	24,681	10,729	77	This is for direct labor hours relating to K2 Overhaul. The calculations were based on 1,142 for GE labor hours.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 512 - Maintenance of Boiler & FO Plant - Labor and Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	RECORDED 2006	AVERAGE 2001-2006	BUDGET 2007	07 Bud v. 01-06 Ave \$ Diff	% Diff	Explanation
512	MGB257N03NEM00000170150	0	23,027	52,179	29,152	127	This is for direct labor hours relating to K3 Overhaul. The calculations were based on 70% of 1,942.5 hours for GBMANT and 70% of 167 hours for GBSUPV.
512	MGE257N03NEM00000170150	0	14,059	29,515	15,456	110	This is for direct labor hours relating to K3 Overhaul. The calculations were based on 32 hours for GESUPV and 1,332 hours for GEMANT.
512	MGE257N04NEM00000172150	21,389	18,238	29,479	11,241	62	This is for direct labor hours relating to K4 Overhaul. The calculations were based on 40 hours for GESUPV and 1,332 hours for GEMANT.
<b>512 Maintenance of Boiler &amp; FO Plant</b>							
<b>Non-Labor</b>		<b>707,126</b>	<b>434,872</b>	<b>859,295</b>	<b>424,423</b>	<b>98</b>	<b>Please see explanations below</b>
512	MGC257M15NEM0000047201	1,309	2,797	89,849	87,052	3112	In 2007 we will retube the first two rows of the M15 (\$86,393).
512	MGA269NSTNENMGZZZZZ501	196,497	41,364	24,000	-17,364	-42	The higher 2006 cost was mainly due to repairs and replacement of corroded portions of the fuel oil consortium pipeline.
512	MGC257M15NEM0000047501	3,541	39,086	289,900	250,814	642	In 2007 we need to retube the first two rows of the M15 boiler; \$250,000 + \$2,400 for crane = \$252,400.



Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 553 Maintenance Electric Plant - Other - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	RECORDED 2006	AVERAGE 2001-2006	BUDGET 2007	07 Bud v. 01-06 Ave \$ Diff	% Diff	Explanation
<b>553 Maintenance Electric Plant - Other</b>							
	<b>Non-Labor</b>	<b>4,253,689</b>	<b>4,269,445</b>	<b>7,737,538</b>	<b>3,468,093</b>	<b>81</b>	Please see explanations below
553	MGD275M03NEM0000151201	0	22,222	166,992	144,770	651	2007 budget for M03 overhaul; last M3 overhaul was in '02.
553	MGD275M04NEM0000065201	0	43,129	186,690	143,561	333	2007 budget for M04 overhaul; last M4 overhaul was in '02.
553	MGD275M05NEM0000066201	0	-3,223	186,690	189,913	-5892	2007 budget for M05 overhaul; last M5 overhaul was in '01.
553	MGD275M06NEM0000022201	0	38,300	186,690	148,390	387	2007 budget for M06 overhaul; last M6 overhaul was in '03.
553	MGD275M08NEM0000067201	-11,165	7,996	149,390	141,394	1768	2007 budget for M8; last M8 overhaul was in '01.
553	MGD275M09NEM0000052201	285,125	45,182	0	-45,182	-100	These are expenses for materials incurred for the 2006 M09 Overhaul.
553	MGD275M11NEM0000068201	513,268	243,192	0	-243,192	-100	These are expenses for materials incurred for the 2006 M11 Overhaul.
553	MGD275M12NEM0000050201	51,475	204,020	451,458	247,438	121	2007 budget for M12 overhaul; last M12 overhaul was in 2005; costs shown in the 2006 recorded accounts for charges relating to the last overhaul that were delayed in recording expenditures.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 553 Maintenance Electric Plant - Other - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

<u>NAR</u> <u>Acct</u> <u>No.</u>	<u>Codeblock</u>	<u>RECORDED</u> <u>2006</u>	<u>AVERAGE</u> <u>2001-2006</u>	<u>BUDGET</u> <u>2007</u>	<u>07 Bud v. 01-06 Ave</u> <u>\$ Diff</u>	<u>% Diff</u>	<u>Explanation</u>
553	MGD275M13NEM00000055201	1,186	186,644	300,000	113,356	61	M13 was overhauled in 2005 and then experienced an engine failure on Dec 9th, 2005. The \$300,000 in the 2007 budget represents cost to repair the engine not recoverable by the insurance carrier.
553	MGD277M06NENMGZZZZZ201	33,118	30,043	84,051	54,008	180	The 2007 budget represents 1999-2005 average materials recorded for the Cooper units (M4-7). We assigned this total to M6 instead of budgeting to each unit separately.
553	MGD277M08NENMGZZZZZ201	56,453	41,869	0	-41,869	-100	The 2006 cost was primarily related to a piston seizure outage/repair
553	MGD277M10NENMGZZZZZ201	68,045	71,236	0	-71,236	-100	The 2006 cost was primarily related to a piston seizure and cylinder liner outage/repair
553	MGD277M12NENMGZZZZZ201	56,186	33,931	176,493	142,562	420	The Mitsubishi budget for materials is budgeted to unit M12. The total in M12 for materials represents the average of recorded costs from 1999-2005. The recorded materials costs in 2006 are mainly for repairs due to the L/S foundation nut below engine do

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 553 Maintenance Electric Plant - Other - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	RECORDED 2006	AVERAGE 2001-2006	BUDGET 2007	07 Bud v. 01-06 Ave \$ Diff	% Diff	Explanation
553	MGD277M13NENMGZZZZZ201	317,723	71,049	0	-71,049	-100	This is mainly for engine frame and cylinder blocks to replace M13.
553	MGE274M19NENMGZZZZZ201	67,541	19,231	5,227	-14,004	-73	The '06 cost was mainly to replace broken hydraulic starter for M19.
553	MGM267MNSNENMGZZZZZ201	138,507	39,388	0	-39,388	-100	This is mainly for obsolete inventory expenses at Maalaea Power Plant.
553	MGC272M14NEM0000175501	-7,008	-448,504	161,615	610,119	-136	2007 budget for generator inspection and cleaning of unit M14
553	MGC272M16NEM0000056501	0	137,374	2,532,060	2,394,686	1743	In 2007, we budgeted to complete the M16 major (50,000 hr) overhaul. This is the second major overhaul for this unit (first was in 1999). We budgeted to use our spare LM2500 engine during the outage.
553	MGC272M17NEM0000356501	0	90,834	853,230	762,396	839	2007 budget for M17 Hot Section. The last Hot Section on M17 was in 2004.
553	MGC272M19NEM0000357501	0	130,000	853,230	723,230	556	2007 budget for M19 Hot Section. The last Hot Section on M19 was in 2003.
553	MGC272MS1NEM0000833501	862,160	143,693	0	-143,693	-100	In 2006 we did a hot section overhaul on the spare CT engine.
553	MGD275M05NEM0000066501	0	43,050	112,650	69,600	162	2007 budget to overhaul M05. The last M5 overhaul was in '01.
553	MGD275M08NEM0000067501	0	31,629	60,885	29,256	92	2007 budget to overhaul M8. The last M8 overhaul was in '01.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 553 Maintenance Electric Plant - Other - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	RECORDED 2006	AVERAGE 2001-2006	BUDGET 2007	07 Bud v. 01-06 Ave \$ Diff	% Diff	Explanation
553	MGD275M11NEM0000068501	122,743	44,635	0	-44,635	-100	These are expenses for outside services rendered for the 2006 M11 Overhaul.
553	MGD275M12NEM0000050501	50,794	60,093	123,350	63,257	105	2007 budget to overhaul M12. The last M12 overhaul was in 2005; costs shown in the 2006 recorded accounts for charges relating to the last overhaul that were delayed in recording expenditures.
553	MGD277M04NENMGZZZZZ501	156,461	48,040	53,496	5,456	11	The higher 2006 cost was due to repairs required to the crankshaft, coupling, and flywheel.
553	MGD277M12NENMGZZZZZ501	105,299	30,200	0	-30,200	-100	This is mainly for services rendered to repair M12 front engine frame on both sides due to crack in frame.
553	MGD277M13NENMGZZZZZ501	314,518	74,545	0	-74,545	-100	This is mainly for outside services rendered to repair M13 engine.
553	MGD277M13NENMGZZZZZ900	-723,081	-123,078	0	123,078	-100	The '06 credit is mainly to record a reduction for M13 loss liability reserve due to engine failure.

Maui Electric Company, Limited

**PRODUCTION OPERATION AND MAINTENANCE EXPENSE**  
**NARUC Account 553M Maintenance Electric Plant - Other - Molokai - Non-Labor**  
**Variance Explanation (2001-2006 Recorded Average vs 2007 Budget)**  
(Dollars)

NAR Acct No.	Codeblock	<u>RECORDED</u> 2006	<u>AVERAGE</u> 2001-2006	<u>BUDGET</u> 2007	<u>07 Bud v. 01-06 Ave</u> \$ Diff	% Diff	<u>Explanation</u>
<b>553M Maintenance Electric Plant - Other Prod Molokai</b>							
	<b>Non-Labor</b>	<b>160,063</b>	<b>251,361</b>	<b>836,116</b>	<b>584,755</b>	<b>233</b>	<b>Please see explanations below</b>
553M	MGT277G07NENMGZZZZ201	77,870	20,788	7,943	-12,845	-62	The 2006 cost was mainly for Cat7 turbocharger due to unit turbocharger failure.
553M	MGT275G07NEM0000156201	0	47,965	0	-47,965	-100	The 2002 (\$203k) and 2004 (\$100k) costs were mainly outside contractor's materials to overhaul Cat8.
553M	MGT275G07NEM0000156501	0	21,294	263,315	242,021	1137	In 2007 we will have unit #7 overhauled by an outside contractor. This unit gets overhauled every 20,000 hours or approximately every two years to three years. The last overhaul was in 2004.
553M	MGT275G08NEM0000030201	0	50,419	0	-50,419	-100	The 2002 (\$185k) and 2004 (\$100k) costs were mainly outside contractor's materials to overhaul Cat8.
553M	MGT275G08NEM0000030501	0	10,983	263,315	252,332	2297	2007 budget to overhaul unit #8 by an outside contractor. This unit gets overhauled every 20,000 hours or approximately every two years to three years. The last overhaul was in 2004.
553M	MGT275G09NEM0000031501	0	42,102	263,315	221,213	525	2007 budget to overhaul unit #9 by an outside contractor. This unit gets overhauled every 20,000 hours or approximately every two years to three years. The last overhaul was in 2004.

CA-IR-226

**Ref: MECO-WP-504-f; Response to CA-IR-100 (Kahului Plant Structural Maintenance).**

Please provide the following:

- a. Analysis of KPP Structural Maintenance in the form presented for MPP in WP-504-f.
- b. Considering the data set forth in CA-IR-100 regarding the KPP berm wall and bulk fuel tank inspection/repairs, what normalizing adjustment would be required if the same logic were followed for KPP that was employed at MPP?

**MECO Response:**

- a. An analysis of KPP Structural Maintenance is provided in Attachment 1.
- b. The normalizing adjustment required would be (\$78,146) as indicated in Attachment 1, line 95.

A rate case normalization adjustment is not appropriate, based on the timing and level of future structural maintenance expenses at KPP. In each of the next three years (2008, 2009, and 2010), one of the three KPP bulk fuel tanks will undergo an out-of-service inspection/repair, at an average cost of \$274K (See Attachment 1, lines 79-81 for cost estimates). In the 2011-2012 time period, MECO expects to incur \$200K for the next phase of the berm wall repair. Given the level and consistency of these future KPP structural maintenance costs, MECO believes the 2007 Operating Budget forecast for KPP structural maintenance is appropriate for the years over which the rates determined in this case will be in effect.

Structural Maintenance (Test Year Normalization Adjustment)  
Naruc Acct: MAINT STRUC - 511 (Maintain Structures)

LINE	Acct Blk Descr	N A R U C												2007	NOTES
			RA	Act	Loc	Ind	EE	2001 Actuals	2002 Actuals	2003 Actuals	2004 Actuals	2005 Actuals	2006 Actuals	Operating Budget	
1	Prod Maint	511	MGA	263	MST	NE	201	0	0	52					
2	Prod Maint	511	MGA	265	NST	NE	205								288
3	Prod Maint	511	MGA	265	NST	NE	205	0	254	143					
4	Prod Maint	511	MGA	265	NST	NE	205				166	587	124		
5	Prod Maint	511	MGA	269	NTF	NE	501				0	0	27,468		
6	Prod Maint	511	MGB	263	NTF	NE	550				0	(1)	0		
7	Prod Maint	511	MGB	263	NWW	NE	201	0	0	7					
8	Prod Maint	511	MGB	263	NWW	NE	205				0	186	0		
9	Prod Maint	511	MGB	263	NST	NE	401								236
10	Prod Maint	511	MGB	263	NST	NE	205	187	164	0					
11	Prod Maint	511	MGB	263	NST	NE	201	917	0	0					
12	Prod Maint	511	MGB	263	NST	NE	201								2,035
13	Prod Maint	511	MGB	263	NST	NE	501				30	1,165	1,360		
14	Prod Maint	511	MGB	263	NST	NE	201				309	4,312	1,440		
15	Prod Maint	511	MGB	263	NST	NE	205								9,767
16	Prod Maint	511	MGB	263	NST	NE	205				8,485	11,049	10,009		
17	Prod Maint	511	MGB	265	NTF	NE	521				0	11	0		
18	Prod Maint	511	MGB	265	NST	NE	201	0	21	74					
19	Prod Maint	511	MGB	265	NST	NE	205	0	24	274					
20	Prod Maint	511	MGB	265	NTF	NE	201	0	156	150					
21	Prod Maint	511	MGB	265	NTF	NE	201				718	0	12		
22	Prod Maint	511	MGB	265	NTF	NE	205	0	0	814					
23	Prod Maint	511	MGB	265	NST	NE	401								1,129
24	Prod Maint	511	MGB	265	NST	NE	501								1,165
25	Prod Maint	511	MGB	265	NTF	NE	501				1,250	0	0		
26	Prod Maint	511	MGB	265	NTF	NE	205				262	460	906		
27	Prod Maint	511	MGB	265	NST	NE	201								9,727
28	Prod Maint	511	MGB	265	NST	NE	205								9,988
29	Prod Maint	511	MGB	265	NST	NE	501								10,195
30	Prod Maint	511	MGB	265	NST	NE	205				5,939	6,354	2,662		
31	Prod Maint	511	MGB	265	NST	NE	501				3,166	11,659	314		
32	Prod Maint	511	MGB	265	NST	NE	205	9,868	4,080	3,356					
33	Prod Maint	511	MGB	265	NST	NE	201				6,899	18,876	5,627		
34	Prod Maint	511	MGB	265	NST	NE	201	14,309	9,568	7,695					
35	Prod Maint	511	MGB	265	NST	NE	501								55,000
36	Prod Maint	511	MGB	265	NST	NE	501	40,147	3,378	21,328					
37	Prod Maint	511	MGB	265	NST	NE	501								100,000
38	Prod Maint	511	MGB	269	NTF	NE	550	(219)	0	0					
39	Prod Maint	511	MGB	269	NTF	NE	501				84,000	0	0		
40	Prod Maint	511	MGB	271	NTF	NE	205	0	9	0					
41	Prod Maint	511	MGB	271	NTF	NE	201	0	0	120					
42	Prod Maint	511	MGB	271	NTF	NE	401								155
43	Prod Maint	511	MGB	271	NTF	NE	205				359	0	14		
44	Prod Maint	511	MGB	271	NTF	NE	201								1,331
45	Prod Maint	511	MGB	271	NTF	NE	550				2,539	0	0		
46	Prod Maint	511	MGB	271	NTF	NE	201				595	1,961	337		
47	Prod Maint	511	MGB	271	NTF	NE	501				11,996	0	0		
48	Prod Maint	511	MGB	271	NTF	NE	501								125,000

[illegible]



L I N E	Acct Blk Descr	N A R U C	RA	Act	Loc	Ind	EE							2007 Operating Budget	N O T E S
								2001	2002	2003	2004	2005	2006		
								Actuals	Actuals	Actuals	Actuals	Actuals	Actuals		

Note 1: Actual expenses indicated on this line rolled up to NARUC 512 because location code NST was inadvertently used instead of NTF. If location code NTF had been used, these costs would have correctly rolled up to NARUC 511.

Note 2: As indicated in response to CA-IR-100, tank inspections for the three Kahului Power Plant bulk fuel storage tanks were last performed in 1998, 1999, and 2000 at an approximate cost of \$210K each. These inspections will be performed again in 2008, 2009, and 2010. MECO does not have an up-to-date quotation for this work but anticipates a substantial increase over the costs incurred ten years ago. For estimating purposes, MECO uses a 3% annual escalation factor to derive the costs shown here.

Note 3: This estimate is based on 1) present age and condition of the wall, 2) original construction methods, 3) location of the wall (severe environment), and 4) conversations with Structural Concrete Bonding & Restoration, Inc.

Note 4: Does not include tank inspections or berm wall repairs.

CA-IR-227

**Ref: MECO T-6, pages 2, 8, 18 and 30, MECO-622, and Response to CA-IR-120 (Vegetation Management).**

The referenced testimony and MECO-622 only contain general references to vegetation management expense, including statements that 2005 and 2006 levels were historically low. MECO's response to CA-IR-120 provides contractor studies containing "raw" rainfall data and refers to the "direct correlation between seasonal rainfall and vegetation growth." Please provide the following:

- a. Have any studies or analyses been prepared by or for MECO that assess the direct correlation between rainfall on Maui, Lanai and/or Molokai and the level of vegetation management costs incurred by MECO?
- b. If the response to part (a) above is affirmative, please provide a copy of such studies or analyses.
- c. In preparing the vegetation forecast for the 2007 test year, did the forecast consider then recent (late 2005 or early 2006) rainfall statistics?
  1. If so, please explain how the recent actual rainfall levels were considered and provide a copy of any forecast documentation supporting the test year forecast.
  2. If not, why not?
- d. In preparing the vegetation forecast for the 2007 test year, did the forecast consider "normal" levels of rainfall statistics?
  1. If so, please explain how normal rainfall levels were considered and provide a copy of any forecast documentation supporting the test year forecast.
  2. If not, why not?

**MECO Response:**

- a. No studies or analyses have been prepared for MECO that assess the direct correlation between rainfall on Maui, Lanai, or Molokai to vegetation management costs. MECO has learned through experience that there is a direct relationship between rainfall and vegetation growth.
- b. See response to part a. above.
- c. MECO did not specifically use the recent rainfall statistics to determine vegetation management budget for the 2007 test year, other than to take into consideration the normal or near normal rainfall for 2004, 2005, and 2006 would result in normal

vegetation growth and the need for at least a normal level of vegetation management.

The response to CA-IR-120 provides the rainfall statistics considered.

- d. Yes, while the vegetation management forecast for the 2007 test year was determined by many factors, including rainfall, the forecast considered normal levels of rainfall in 2006 and 2007. The normal levels of rainfall would result in normal vegetation growth and the need for a normal level of vegetation management.

CA-IR-228

**Ref: MECO Response to CA-IR-120 (Vegetation Management).**

Referring to pages 2-8 of the response to CA-IR-120, please provide the following:

- a. How does MECO utilize this rainfall data to adjust and prioritize its vegetation management schedule? Please explain.
- b. Please identify the source(s) of the rainfall data (actuals and normals), specifically noting whether the data was obtained or continues to be available from public sources (e.g., NOAA publications).
- c. In calendar years 2004 through 2006, there are multiple instances where normal rainfall data is supplied for a particular location but actual rainfall data was not presented. Please explain why data was missing from these documents.

**MECO Response:**

- a. MECO has found that the level of rainfall the previous year is indicative of the amount of vegetation that will have to be removed in an area. Areas receiving heavy rains will have denser foliage that requires more time to trim and dispose. Following a year with drought conditions the tree trimming crews can process an area faster since the amount of vegetation waste that is produced in the trimming process is significantly less than following a year with heavy rainfall. The processing of waste is the single largest time consuming function that the vegetation management contractor faces. While overall rainfall conditions for each island may be classified as above normal, normal, or drought, there are always areas on the island that either exceed or do not meet the overall island rainfall condition. Rainfall data by area is used to identify these anomalies and is one of the factors used in planning the block trimming schedule for the year. This data is also used to set the timing of vegetation management actions, which is critical since vegetation grows at different rates during the year. Since MECO has limited resources to

do vegetation management, this data aids in identifying and prioritizing the scope and location of work.

- b. All rainfall data used by MECO comes from the NOAA website and is generally available for the current and previous year. The data is either downloaded by MECO or supplied by Asplundh when MECO and Asplundh meet to discuss and make vegetation management plans for the coming year.
- c. The data provided to the CA was the data downloaded from the NOAA website and were scans of the working file MECO had still retained. The actual rainfall data for particular locations was not present in the information obtained from NOAA. The files downloaded from NOAA and provided in the response to CA-IR-120 have not been edited. While MECO does not know the reason this information is not provided, NOAA may not have been able to obtain data from gauges in these locations for various reasons.

CA-IR-229

**Ref: MECO Response to CA-IR-122 (Vegetation Management).**

As indicated in CA-IR-122, MECO-620A refers to reduced vegetation management expense in 2005 and 2006 as being below budget. The data supplied in response to CA-IR-122(b) indicates that the number of vegetation outages caused by "Trees and Branches" in these below budget years is the highest (2005) and third highest (2006) during this eight-year period. Similarly, total vegetation outages ("Trees and Branches" plus "High Winds") represent the second (2005) and fourth (2006) highest years. Please provide the following:

- a. Please explain how the relatively high outage counts in 2005 and 2006 correlate with reduced vegetation expense.
- b. Please explain how the relatively high outage counts in 2005 and 2006 correlate with actual rainfall statistics.
- c. As a result of increasing vegetation management expense in the 2007 test year forecast, did the Company also reduce maintenance expense attributable to vegetation caused outages? Please explain.
  1. If so, please provide the amount and supporting calculations associated with the reduced vegetation outage maintenance.
  2. If not, why not?

**MECO Response:**

- a. Unfortunately, when MECO deferred planned vegetation management in 2005 and 2006, it allowed trees to grow closer to the lines than would have resulted from normal annual vegetation maintenance, which greatly increases the chances of wind driven vegetation making contact with the utility's infrastructure. These reductions also force using the vegetation management contractor in responding to "hot spots", rather than the more efficient and effective practice of scheduled block trimming.
- b. The rainfall in 2004, 2005, and 2006 was normal or near normal for many areas of the islands, which resulted in vegetation growth that required block maintenance trimming. However, with the reduction in funds spent on vegetation management expenses in 2005 and 2006, the deferral of scheduled block maintenance trimming

allowed for heavier vegetation in some areas. The heavier vegetation may have resulted in more vegetation caused outages. Rainfall is however, just one of the factors that contribute to vegetation outages. For example, trees fall due to age, unstable soil, and customer caused incidents.

- c. The 2007 budget for vegetation management is only slightly higher than the amounts budgeted for 2005 and 2006, as well as the average for the 1999-2004 period. Although reduction in vegetation management generally results in an increase in vegetation outages, it is difficult to quantify or demonstrate the relationship because this is only one of the many factors that contribute to vegetation outages. MECO's 2007 budget estimate of \$8,360 reflects a normal amount of maintenance expense based on 96 Construction crew hours for O&M repairs due to vegetation caused outages. However, the June 30, 2007 year to date actuals for this activity is \$14,819.

CA-IR-230

**Ref: MECO Responses to CA-IR-106 and CA-IR-107 (Steel Poles).**

Please provide the following:

- a. When did MECO commence installing "second generation steel poles" as discussed in the response to CA-IR-107(a)?
- b. Referring to the response to part (e) of CA-IR-106, does the steel pole count of 416, by vintage year, represent only "first generation steel poles" or a combination of first and second generation poles? Please explain.
- c. Referring to the response to part (e) of CA-IR-106, has MECO not installed any steel poles since calendar year 2000? Please explain and update the response to CA-IR-106, as necessary.

**MECO Response:**

- a. MECO began installing "second generation steel poles" in 1997.
- b. The 416 steel pole count represents a combination of first and second generation poles.  
Of this count, 197 poles would be considered first generation steel poles by MECO.
- c. MECO has not installed any new steel pole lines since 2000. MECO has installed a few steel poles on the system since 2000, but they were not included in the count of steel poles for the reasons explained in the response to CA-IR-106 (e).



CA-IR-231

**Ref: MECO Response to CA-IR-107 (Steel Poles).**

In response to part (f) of CA-IR-107, the Company indicates that HECO uses a different steel pole finish process than MECO. HECO purchases unfinished, galvanized poles and then contracts to have the finish applied before installation, whereas MECO purchases steel poles finished by the manufacturer at a lower cost. Please provide the following:

- a. Has MECO investigated the relative cost of adopting HECO's finishing process, in light of HECO's apparent success at mitigating the type of corrosion experienced by MECO? Please explain.
- b. How much more expensive is HECO's finishing process as compared to MECO's on a per pole basis? Please explain and show comparable numbers.
- c. How much more expensive are the "second generation" Valmont poles now being purchased by MECO, in relation to the cost of the "first generation" poles? Please explain and show comparable numbers.

**MECO Response:**

- a. HECO only used an in-house finishing process on their first generation steel poles and they no longer finish their steel poles in-house. MECO/HECO/HELCO now purchase poles that are not prone to accelerated corrosion from Valmont Industries. At the time HECO started finishing their poles in-house there was no empirical evidence that the process HECO was utilizing would prove superior or inferior to the existing manufacturer's finishing processes and as such, MECO chose to have their steel poles purchased already finished from the manufacturer. By the time it became apparent that there were corrosion problems with the first generation poles purchased by MECO, MECO and HECO had switched to purchasing poles from Valmont Industries.
- b. As stated in the response to part a., HECO no longer finishes its poles in-house. A comparison of HECO's cost to finish its first generation poles in-house to the manufacturer's cost to finish MECO's first generation poles is not available.

- c. It is not possible to compare the costs of second generation poles to the cost of first generation poles because each pole is unique, with its price dependent on the specifications requested, commodity cost, labor cost, etc. On any steel pole line each pole is engineered for its unique position and moment loading in the geography of the line.

CA-IR-232

**Ref: MECO Responses to CA-IR-112 and CA-IR-133 (T&D Staffing).**

In response to CA-IR-133(b), MECO identified two T&D vacancies that were in the recruitment process. As of June 8, 2007, the response to CA-IR-112 (Attachment A, page 7) indicates that the actual T&D employee count was 104; while the T&D 2007 test year forecast was based on full staffing of 111 employees. Please provide the following:

- a. Please explain why part (b) of CA-IR-133 only identified two (2) T&D vacancies (i.e., in recruitment) when the response to CA-IR-112 appears to indicate that there are seven (7) unfilled T&D positions.
- b. Does MECO distinguish between employee vacancies and unfilled positions? Please explain.
- c. Please explain why MECO believes that it is appropriate for the T&D 2007 test year forecast to assume full staffing of 111 employees throughout the year when the Company had not yet achieved that level as of June 8, 2007.

**MECO Response:**

- a. The response to CA-IR-133 (b) identified unfilled positions (positions under recruitment), of which there are two. The response to CA-IR-112, Attachment A, page 7, provided the actual staffing level as of June 8, 2007. The difference is that the response to CA-IR-133 (b) excludes positions that have been filled, but the employees have not yet started working in those positions. The response to CA-IR-112 list employee counts that were currently on the payroll as of June 8, 2007. The other five positions that are filled but vacant, because the employees had not started working in the positions when the response to CA-IR133 was filed, were: two MDK crew scheduled to start on July 2nd and August 15th; one MDC crew scheduled to start on July 2nd; one MDM crew scheduled to start July 2nd; and one MDR dispatcher who was scheduled to start on July 2nd, but was deferred one month due to the applicant having a personal injury that prohibited him from starting as scheduled.

- b. Internally T&D does distinguish between employee vacancies and unfilled positions.

Vacancies are positions that are no longer in recruitment because candidates have accepted the positions, but have not yet started working in the positions. Unfilled positions are those positions that are under recruitment.

- c. At the time the 2007 test year budget was finalized in 2006, it was anticipated that full staffing would be obtained in early 2007. As indicated above, T&D expects its employee count to be 109 by August, with the filing of the five vacant positions. T&D is also actively recruiting to fill the remaining two unfilled positions by the end of the year. Since this rate case will establish rates beyond the 2007 test year, it is reasonable that these rates be set at a level that takes into consideration full staffing, which will be achieved in 2007 and carried forward into 2008 and beyond.

CA-IR-233

**Ref: MECO Response to CA-IR-113 (T&D Labor Requirements).**

In response to part (d) of CA-IR-113, MECO states, in part: "These blanket projects contain labor demands as forecasted by Accounting and Engineering based on historic results and trending." Please provide the following:

- a. Please provide specific examples of how Accounting and Engineering forecast labor demands for "blanket projects."
- b. Referring to the response to part (a) above, please demonstrate how the forecasted blanket project labor demands are integrated with the labor input sheets provided by witness T-6 in response to CA-IR-1.
- c. Can the response of witness T-6 to CA-IR-1 (see Attachment 3) be expanded to include, for each RA, the labor demands associated with blanket projects? Please explain.
- d. Referring to part (c) above, please recast or revise the response of witness T-6 to CA-IR-1 (see Attachment 3) to include, for each RA, the labor demands associated with blanket projects.

**MECO Response:**

- a. In forecasting labor demands for "blanket projects", the Accounting Department provides to the Engineering Department a preliminary 5-year capital expenditure forecast by blanket project category in dollars, which is based on the trended 5-year historical recorded average capital expenditures for these project categories, adjusted for the annual estimated growth rate in average customer counts. Engineering reviews the preliminary 5-year expenditures (dollars) forecast, estimates the labor hours associated with each project, and adjusts the preliminary forecast, if needed. Attachment 1 is an example of the above-mentioned budgeting process which illustrates the preliminary and final (2007 Test Year) labor hours budget amounts for the responsible area (RA) "MDR".
- b. The labor demands for blanket projects are integrated into the labor input sheets under the line item "Other Non O&M Productive Hours". This category also includes other

productive hours that are not O&M, such as non-blanket (specific), clearing, and temporary projects. As shown in Attachment 1, the breakdown of the 2007 forecast of "Other Non O&M Productive Hours" for the "MDR" RA is as follows:

Blanket Projects (Including Removals)	6,006 (5,418 + 588)
Non-Blanket (Specific) Projects	2,461
Clearing	4,852
Temporary Projects	<u>1,056</u>
Total Other Non O&M Productive Hours	<u>14,375</u>

The total Other Non O&M Productive Hours for the "MDR" RA shown on the labor input sheets on pages 12-18 of Attachment 6A of the response to CA-IR-1 for MECO T-6 is 14,375 as shown below:

<u>Labor Class</u>	
DBUOC (page 12)	784
DRCREW (page 13)	7,183
DRDISP (page 14)	1,610
DRDSUP (page 15)	1,032
DRFCSP (page 16)	1,134
DRFSUP (page 17)	1,284
DRSENG (page 18)	<u>1,348</u>
Total Other Non O&M Productive Hours	<u>14,375</u>

- c. The response to CA-IR-1, Attachment 3, is for O&M labor only and cannot be expanded since it does not include labor demands associated with capital blanket projects.
- Attachment 2 provides the labor demands associated with blanket projects for each RA that are included in the labor input sheets.
- d. See response to part c. above.

Maui Electric Co., Limited  
2007 Rate Case Data  
Example of Capital Blanket Project Labor Demands

RA	Ind	Project	Type	Description	Preliminary Budget Labor Hours (5/23/06)	2007 Test Year Labor Hours (10/5/06)	Difference
MDR	NI	M0000747	Blanket	Trans Syst Eq. Purch-Radiator	16	16	-
MDR	NI	M0000819	Blanket	LCM - Substation Equipment	8	8	-
MDR	NI	M3500000	Blanket	MINOR TRANSM PLANT LINES	96	96	-
MDR	NI	M7000000	Blanket	OVERHEAD SERVICES & EXTENSIONS	816	576	(240)
MDR	NI	M7300000	Blanket	MINOR POLE LINE RELOCA	264	16	(248)
MDR	NI	M7750000	Blanket	Other Overhead additions	696	516	(180)
MDR	NI	M7900000	Blanket	METERS & METERING EQUIP (RB)	120	120	-
MDR	NI	M7920000	Blanket	MINOR STATE HWY PROJECTS	40	40	-
MDR	NI	M7990000	Blanket	STREET LIGHTS	48	48	-
MDR	NI	M8000000	Blanket	UNDERGROUND SERVICES & EXTNS.	3,300	3,444	144
MDR	NI	M8500000	Blanket	MINOR OH-UG CONVERSIONS	80	80	-
MDR	NI	M8700000	Blanket	MINOR CABLE FAILURE REPLACE.	428	428	-
MDR	NI	M8900000	Blanket	Other Underground Additions	324	30	(294)
<b>Sub-Total Blanket Projects</b>					<b>6,236</b>	<b>5,418</b>	<b>(818)</b>
MDR	NR	M3500000	Blanket-Removal	MINOR TRANSM PLANT LINES	36	36	-
MDR	NR	M7000000	Blanket-Removal	OVERHEAD SERVICES & EXTENSIONS	288	288	-
MDR	NR	M7750000	Blanket-Removal	Other Overhead additions	72	72	-
MDR	NR	M7900000	Blanket-Removal	METERS & METERING EQUIP (RB)	48	48	-
MDR	NR	M7920000	Blanket-Removal	MINOR STATE HWY PROJECTS	12	12	-
MDR	NR	M8000000	Blanket-Removal	UNDERGROUND SERVICES & EXTNS.	96	96	-
MDR	NR	M8700000	Blanket-Removal	MINOR CABLE FAILURE REPLACE.	24	24	-
MDR	NR	M8900000	Blanket-Removal	Other Underground Additions	12	12	-
<b>Sub-Total Blanket Removal Projects</b>					<b>588</b>	<b>588</b>	<b>-</b>
MDR	NC	M0000798	Clearing	MECO 2007 TY Rate Case	-	650	650
MDR	NC	NMDZZZZZ	Clearing	Distribution	3,652	4,202	550
<b>Sub- Total Clearing</b>					<b>3,652</b>	<b>4,852</b>	<b>1,200</b>
MDR	BT	M0000042	Temporary	<b>Temporary Services-Meco</b>	<b>1,056</b>	<b>1,056</b>	<b>-</b>
MDR	NI	M0000301	Specific	Makawao SCADA Installation	120	120	-
MDR	NI	M0000302	Specific	Keanae SCADA Installation	120	120	-
MDR	NI	M0000387	Specific	Lanai SCADA Upgrade	140	140	-
MDR	NI	M0000658	Specific	Wailea Cap Bank #3	112	112	-
MDR	NI	M0000659	Specific	Makawao 1200 KVAR Cap Bank	6	6	-
MDR	NI	M0000660	Specific	Paia 23kV Breaker Repl	40	40	-
MDR	NI	M0000661	Specific	Kihei Cap Bank #3	112	112	-
MDR	NI	M0000687	Specific	Kanaha Tsf #B Replacement	-	48	48
MDR	NI	M0000697	Specific	69kV Reloc Waikapu	231	231	-
MDR	NI	M0000710	Specific	COM Lwr HP Road Phase 4	-	42	42
MDR	NI	M0000716	Specific	Install Viper-E25 Onehee Ave	12	12	-
MDR	NI	M0000718	Specific	Reconductor Ckt.1347-Kanaha	10	10	-
MDR	NI	M0000719	Specific	Recond-Kaahumanu-Papa/Kane	14	14	-
MDR	NI	M0000720	Specific	Reconductor-Mahalani St-UG	18	18	-
MDR	NI	M0000777	Specific	KPP K2 Tsf Replacement	48	48	-
MDR	NI	M0000796	Specific	SCADA Control Enhancements	160	160	-
MDR	NI	M0000805	Specific	Relocate Camp Maui	132	132	-
MDR	NI	M0000807	Specific	Mahinahina Sub 50 Repl Tsf 2	-	300	300
MDR	NI	M0000808	Specific	Kihei 35 Add-Dist. To Hi Tech	32	32	-
MDR	NI	M0000809	Specific	Kihei Unit Sub #4 Addition	172	172	-
MDR	NI	M0000810	Specific	Napili Sub 29 Tsf. 2 Replace	132	196	64
MDR	NI	M0000811	Specific	Kihei 35 Dist Add-Elau PI	32	32	-
MDR	NI	M0000824	Specific	Haiku Sub Raise Tsf Bank	8	8	-
MDR	NI	M0000826	Specific	Onehee SCADA Inst	120	120	-
MDR	NI	M0000827	Specific	Wailuku Heights SCADA Inst	120	120	-
MDR	NI	M0000834	Specific	Kah Airport Cable Upgrade	-	28	28
MDR	NI	M8980000	Specific	Makena CKT 1395 Extension	-	88	88
<b>Sub-Total Specific Projects</b>					<b>1,891</b>	<b>2,461</b>	<b>570</b>
<b>Total</b>					<b>13,423</b>	<b>14,375</b>	<b>952</b>

Maui Electric Co., Limited  
2007 Rate Case Data  
Labor Hour Demands by Responsible Area (RA)

RA	Capital Blanket Projects (Including Removals)	Capital Non-Blanket (Specific) Projects (Including Removals)	Other	Total
MDC	1,132	3,034	298	4,464
MDE	1,760	4,078	2,757	8,595
MDK	25,488	21,759	5,420	52,667
MDL	2,032		812	2,844
MDM	2,311	336	174	2,821
MDR	6,006	2,461	5,908	14,375
MDS			7,332	7,332
MDT	2,370	1,991	850	5,211
MWI	120	60		180
<b>TOTAL</b>	<b>41,219</b>	<b>33,719</b>	<b>23,551</b>	<b>98,489</b>



Maui Electric Co., Limited

Example of Capital Blanket Project Labor Demands

RA	Ind	Project	Type	Description	Preliminary Budget Labor Hours	2007 Test Year Labor Hours	Difference
MDR	NI	M0000747	Blanket	Trans Syst Eq. Purch-Radiator	-	16	16
MDR	NI	M0000819	Blanket	LCM - Substation Equipment	-	8	8
MDR	NI	M3500000	Blanket	MINOR TRANSM PLANT LINES	120	96	(24)
MDR	NI	M7000000	Blanket	OVERHEAD SERVICES & EXTENSIONS	816	576	(240)
MDR	NI	M7300000	Blanket	MINOR POLE LINE RELOCA	264	76	(248)
MDR	NI	M7750000	Blanket	Other Overhead additions	696	516	(180)
MDR	NI	M7900000	Blanket	METERS & METERING EQUIP (RB)	120	120	-
MDR	NI	M7920000	Blanket	MINOR STATE HWY PROJECTS	72	40	(32)
MDR	NI	M7990000	Blanket	STREET LIGHTS	48	48	-
MDR	NI	M8000000	Blanket	UNDERGROUND SERVICES & EXTNS.	3,300	3,444	144
MDR	NI	M8500000	Blanket	MINOR OH-UG CONVERSIONS	12	80	68
MDR	NI	M8700000	Blanket	MINOR CABLE FAILURE REPLACE.	428	428	-
MDR	NI	M8900000	Blanket	Other Underground Additions	24	30	(294)
<b>Sub-Total Blanket Projects</b>					<b>5,200</b>	<b>5,418</b>	<b>(782)</b>
MDR	NR	M3500000	Blanket-Removal	MINOR TRANSM PLANT LINES	36	36	-
MDR	NR	M7000000	Blanket-Removal	OVERHEAD SERVICES & EXTENSIONS	288	288	-
MDR	NR	M7750000	Blanket-Removal	Other Overhead additions	72	72	-
MDR	NR	M7900000	Blanket-Removal	METERS & METERING EQUIP (RB)	48	48	-
MDR	NR	M7920000	Blanket-Removal	MINOR STATE HWY PROJECTS	12	12	-
MDR	NR	M8000000	Blanket-Removal	UNDERGROUND SERVICES & EXTNS.	96	96	-
MDR	NR	M8700000	Blanket-Removal	MINOR CABLE FAILURE REPLACE.	24	24	-
MDR	NR	M8900000	Blanket-Removal	Other Underground Additions	12	12	-
<b>Sub-Total Blanket Removal Projects</b>					<b>588</b>	<b>588</b>	<b>-</b>
MDR	NC	M0000798	Clearing	MECO 2007 TY Rate Cas	-	650	650
MDR	NC	NMDZZZZZ	Clearing	Distribution	3,406	4,202	796
<b>Sub- Total Clearing</b>					<b>3,406</b>	<b>4,852</b>	<b>1,446</b>
MDR	BT	M0000042	Temporary	Temporary Services-Meco	1,056	1,056	-
MDR	NI	M0000301	Specific	Makawao SCADA Installation	-	120	120
MDR	NI	M0000302	Specific	Keanae SCADA Installation	-	120	120
MDR	NI	M0000387	Specific	Lanai SCADA Upgrade	-	140	140
MDR	NI	M0000658	Specific	Wailealea Cap Bank #3	48	112	64
MDR	NI	M0000659	Specific	Makawao 1200 KVAR Cap Bank	6	6	-
MDR	NI	M0000660	Specific	Papa 23kV Breaker Repl	-	40	40
MDR	NI	M0000661	Specific	Kihei Cap Bank #3	48	112	64
MDR	NI	M0000687	Specific	Kanaha Tsf #B Replacement	-	48	48
MDR	NI	M0000697	Specific	69kV Reloc Waikapu	-	231	231
MDR	NI	M0000710	Specific	COM Lwr HP Road Phase 4	-	42	42
MDR	NI	M0000716	Specific	Install Viper-E25 Onehee Ave	12	12	-
MDR	NI	M0000718	Specific	Reconductor Ckt.1347-Kanaha	16	10	(6)
MDR	NI	M0000719	Specific	Recond-Kaahumanu-Papa/Kane	14	14	-
MDR	NI	M0000720	Specific	Reconductor-Mahalani St-UG	18	18	-
MDR	NI	M0000777	Specific	KPP K2 Tsf Replacement	-	48	48
MDR	NI	M0000796	Specific	SCADA Control Enhancements	-	160	160
MDR	NI	M0000805	Specific	Relocate Camp Maui	-	132	132
MDR	NI	M0000806	Specific	Mahinahina Sub 50 Repl Tsf 2	-	300	300
MDR	NI	M0000808	Specific	Kihei 35 Add-Dist. To Hi Tech	-	32	32
MDR	NI	M0000809	Specific	Kihei Unit Sub #4 Addition	-	172	172
MDR	NI	M0000810	Specific	Napili Sub 29 Tsf. 2 Replace	-	196	196
MDR	NI	M0000811	Specific	Kihei 35 Dist Add-Eleu Pl	-	32	32
MDR	NI	M0000824	Specific	Haiku Sub Raise Tsf Bank	-	8	8
MDR	NI	M0000826	Specific	Onehee SCADA Inst	-	120	120
MDR	NI	M0000827	Specific	Wailuku Heights SCADA Inst	-	120	120
MDR	NI	M0000834	Specific	Kah Airport Cable Upgrade	-	28	28
MDR	NI	M8980000	Specific	Makena CKT 1395 Extension	-	88	88
<b>Sub-Total Specific Projects</b>					<b>162</b>	<b>2,461</b>	<b>2,299</b>
<b>Total</b>					<b>11,412</b>	<b>14,375</b>	<b>2,963</b>

CA-IR-234

**Ref: MECO Response to CA-IR-113 (T&D Labor Requirements).**

In response to part (d) of CA-IR-113, MECO states, in part: "Jobs initiated in one year and completed in a subsequent year are generally given unique project numbers outside of the blankets and the labor demands are estimated by the individual project manager utilizing their estimating software, which assesses labor demand estimates associated with components to be installed in the project." Please provide the following:

- a. Please provide specific examples of how individual project managers forecast labor demands for non-blanket capital projects.
- b. Please demonstrate how the non-blanket capital project labor demands are integrated with the labor input sheets provided by witness T-6 in response to CA-IR-1.
- c. Can the response of witness T-6 to CA-IR-1 (see Attachment 3) be expanded to include, for each RA, the labor demands associated with non-blanket capital projects? Please explain.
- d. Referring to part (c) above, please recast or revise the response of witness T-6 to CA-IR-1 (see Attachment 3) to include, for each RA, the labor demands associated with non-blanket capital projects.

**MECO Response:**

- a. For non-blanket (specific) capital projects, an estimate is prepared by the respective project manager following the design of the electrical system requirements for the project. The estimate is broken down by productive labor hours for each activity and labor class. Attachment 1 to this response provides examples of the labor hour demands for specific projects; M0000807, Mahinahina Sub 50 Replacement Transformer 2 and M0000810, Napili Sub 29 Transformer 2 Replacement.
- b. The labor demands for specific projects are integrated into the labor input sheets under the line item "Other Non O&M Productive Hours". See the response to CA-IR-233, part b., for the breakdown of this category.

- c. The response to CA-IR-1, Attachment 3, is for O&M labor only and cannot be expanded since it does not include labor demands associated with capital blanket projects.

Attachment 2 of the response to CA-IR-233 provides the labor demands associated with specific projects for each RA that are included in the labor input sheets.

- d. See response to part c. above

Maui Electric Co., Limited  
2007 Rate Case Data  
Example of Non-Blanket (Specific) Capital Project Labor Demands

Proj	RA	Act	Loc	Ind	Lbr Class	Line Item	2007 TY Lbr Hrs
M0000807	MDA	405	MAU	NI	DASENG	Mahinahina Sub 50 Repl Tsf 2 - T&D Staff ENGR	80
						<b>MDA Sub-Total</b>	<b>80</b>
M0000807	MDC	417	MAU	NI	DCCREW	Mahinahina Sub 50 Repl Tsf 2 - DC Labor	80
M0000807	MDC	417	MAU	NI	DCSUPV	Mahinahina Sub 50 Repl Tsf 2 - DC Supv Labor	16
						<b>MDA Sub-Total</b>	<b>96</b>
M0000807	MDE	417	MAU	NI	DECREW	Mahinahina Sub 50 Repl Tsf 2 - DE Labor	320
M0000807	MDE	417	MAU	NI	DESUPV	Mahinahina Sub 50 Repl Tsf 2 - DE Supv Labor	32
M0000807	MDE	417	MAU	NR	DECREW	Mahinahina Sub 50 Repl Tsf 2 - DE Labor REMOVAL	80
						<b>MDE Sub-Total</b>	<b>432</b>
M0000807	MDK	417	MAU	NI	DKCREW	Mahinahina Sub 50 Repl Tsf 2 - Construction Crew	96
M0000807	MDK	417	MAU	NI	DKSUPV	Mahinahina Sub 50 Repl Tsf 2 - Construction Supv	12
						<b>MDK Sub-Total</b>	<b>108</b>
M0000807	MDR	417	MAU	NI	DRCREW	Mahinahina Sub 50 Repl Tsf 2 - Troubleman Labor	20
M0000807	MDR	417	MAU	NI	DRDISP	Mahinahina Sub 50 Repl Tsf 2 - Dispatcher	100
M0000807	MDR	417	MAU	NI	DRDSUP	Mahinahina Sub 50 Repl Tsf 2 - Dispatcher Supv	100
M0000807	MDR	417	MAU	NI	DRFSUP	Mahinahina Sub 50 Repl Tsf 2 - Troubleman Supv	16
M0000807	MDR	419	MAU	NI	DRSENG	Mahinahina Sub 50 Repl Tsf 2 - SCADA Engr	64
						<b>MDR Sub-Total</b>	<b>300</b>
M0000807	MWS	405	MAU	NI	WSSENG	Mahinahina Sub 50 Repl Tsf 2 - WS Labor	160
M0000807	MWS	405	MAU	NI	WSSUPV	Mahinahina Sub 50 Repl Tsf 2 - Supv Staff ENGR	48
						<b>MWS Sub-Total</b>	<b>208</b>
						<b>M0000807 Total</b>	<b>1,224</b>

Proj	RA	Act	Loc	Ind	Lbr Class	Line item	2007 TY Lbr Hrs
M0000810	MDA	405	MAU	NI	DASENG	Napili Sub 29 Tsf. 2 Replace - T&D Staff Engineer	76
						<b>MDA Sub-Total</b>	<b>76</b>
M0000810	MDC	419	MAU	NI	DCCREW	Napili Sub 29 Tsf. 2 Replace - DC CREW	80
M0000810	MDC	419	MAU	NI	DCSUPV	Napili Sub 29 Tsf. 2 Replace - DC SUPV	16
						<b>MDC Sub-Total</b>	<b>96</b>
M0000810	MDE	417	MAU	NI	DECREW	Napili Sub 29 Tsf. 2 Replace - Maint	320
M0000810	MDE	417	MAU	NI	DESUPV	Napili Sub 29 Tsf. 2 Replace - Maint. Supv.	32
M0000810	MDE	417	MAU	NR	DECREW	Napili Sub 29 Tsf. 2 Replace - DE Labor REMOVE	80
						<b>MDE Sub-Total</b>	<b>432</b>
M0000810	MDK	417	MAU	NI	DKCREW	Napili Sub 29 Tsf. 2 Replace - Construction Crew	96
M0000810	MDK	417	MAU	NI	DKSUPV	Napili Sub 29 Tsf. 2 Replace - Const. Supv.	12
						<b>MDK Sub-Total</b>	<b>108</b>
M0000810	MDR	407	MAU	NI	DRSENG	Napili Sub 29 Tsf. 2 Replace - SCADA Engineer	64
M0000810	MDR	417	MAU	NI	DRCREW	Napili Sub 29 Tsf. 2 Replace - Troubleman Labor	20
M0000810	MDR	417	MAU	NI	DRDISP	Napili Sub 29 Tsf. 2 Replace - Dispatcher	16
M0000810	MDR	417	MAU	NI	DRDSUP	Napili Sub 29 Tsf. 2 Replace - Dispatcher Supv.	16
M0000810	MDR	417	MAU	NI	DRFSUP	Napili Sub 29 Tsf. 2 Replace - Troubleman Supv.	16
M0000810	MDR	419	MAU	NI	DRSENG	Napili Sub 29 Tsf. 2 Replace - SCADA Engineer	64
						<b>MDR Sub-Total</b>	<b>196</b>
M0000810	MWS	405	MAU	NI	WSSENG	Napili Sub 29 Tsf. 2 Replace - Staff Engineer	180
M0000810	MWS	405	MAU	NI	WSSUPV	Napili Sub 29 Tsf. 2 Replace - Supv Staff Engineer	44
						<b>MWS Sub-Total</b>	<b>224</b>
						<b>M0000810 Total</b>	<b>1,132</b>

CA-IR-235

**Ref: MECO Response to CA-IR-113 (T&D Labor Requirements).**

In response to part (d) of CA-IR-113, MECO states, in part: "In general, due to the complexity of the hundreds of different tasks, the uniqueness of each and every job and task, and the diversity of the equipment T&D is responsible for, the labor demands are not based on specific tasks or work/systems requirements, but rather on historical precedence and identified desired outcomes for the T&D equipment mix." Please provide the following:

- a. Please further explain the reference to "historical precedence" including examples of how such methodology was employed in the O&M labor forecast (e.g., historical average labors hours per inspection times forecast number of inspections).
- b. Please further explain the reference to "identified desired outcomes" including examples of how such methodology was employed in the O&M labor forecast.
- c. Referring to part (b) above, please explain how the "identified desired outcomes" were determined.

**MECO Response:**

- a. The work performed by the T&D department is extremely diverse, fluid, and unpredictable. Each job is unique and the labor requirements vary dramatically within similar tasks. As a result, rather than try to estimate every job in advance T&D budgets for individual activities codes by RA in aggregate based on historical precedence (trending, distribution, and averages), with allowances for any new or unique task that were not contained in the historic numbers or which are no longer undertaken. An example of using "historical precedence" methodology can be demonstrated by MECO's budgeting for direct buried cable fault repairs for its Construction work group (MDK). Direct buried cable faults fall under the activity code 478. The seven year average for labor hours spent on this activity is 1,326 hours a year. The more recent three year average for 2004-2006, had a higher average of 1,423 hours and was consistently trending higher each year. (Note that the 2006 budgeted amount of 2,072 hours was used

in the 2004-2006 average. The actual 2006 labor hours for this activity code was 2,556 hours). The expense is trending higher due to the increasing failure rate of direct buried primary cable which had been increasing at rate of approximately 20% for the last few years (see MECO-609, page 1). Based on this historical precedence, the budget to repair direct buried cable faults was initially forecasted at 1,708 hours. This was based on the average three year labor demand of 1,423 hours plus 20% (285 hours) to take into account the increasing rate of cable faults. In addition, labor demands to implement a new cable testing program in 2007 that also falls under the activity code 478, were added. The resources needed for the new cable testing was estimated at 1,280 hours a year, based on a four man crew testing cables for eight weeks per year. The eight weeks per year was based on the goal of testing approximately 80,000 feet of older direct buried cable (see MECO-609, page 3) in two years. It was estimated that a crew of four could safely test approximately 1,000 feet of cable a day. After the worst of the direct buried cable is tested in the first two years, it was estimated that it would take an additional 10 years to test the remainder of MECO's underground cable infrastructure. The total forecasted labor hours for this activity for 2007 were estimated to be 2,988 hours (1,708 + 1,280).

- b. "Identified desired outcomes" are additional or expanded work goals or targets for the budget year that affect a specific work group for a specific activity that would not have been captured in previous years' actuals. For example, as explained in the response to part (a) above, there was an additional added desired outcome for 2007 and going forward for implementing the use of new cable testing equipment that has become

available. This new equipment will greatly improve the efficiency and effectiveness of MECO's direct buried cable replacement projects. In the near term, the testing will help MECO prioritize cable change outs. It is anticipated that in the long term the cable change outs will reduce cable failures and their related expenses. The labor to do this testing falls into this activity and must be taken into consideration and factored in with the historical precedence to come up with a budget estimate that will provide the labor resource hours necessary to perform the new testing and subsequently repair the cables. As explained above, as a result, an additional 1,280 hours were added to the test year estimate.

- c. "Identified desired outcomes" may come from multiple sources, such as new technology, practices, or procedures in the industry, identification of trends in specific equipment failures, or a statistical analysis review of system performance indices. For example, the new cable testing equipment, will allow MECO to replace only cable needing replacement in subdivisions suffering high failure rates, rather than wholesale cable replacement as was the previous normal industry method.

CA-IR-236

**Ref: MECO Response to CA-IR-124 (T&D Labor).**

In response to CA-IR-124, MECO provided a historical comparison of straight time and overtime hours (Attachment 1) and the composite O&M/capital ratio (Attachment 2) with the 2007 test year forecast for both T&D and engineering. Please provide the following:

- a. Referring to Attachment 1, please explain why the Engineering overtime hours are significantly higher in the 2007 test year forecast even though straight time hours are also higher.
- b. Referring to Attachment 2, please explain why and provide the basis for the T&D O&M percentage being materially higher in the 2007 test year forecast relative to recent historical experience.

**MECO Response:**

- a. Forecasted Engineering overtime hours are significantly higher in the 2007 test year because the 2007 estimates are aggregate labor supply hours of all RA's in Engineering compared to all estimated labor demands for all RA's for 2007 and as such they include merit position excess labor hour demands that will not be compensated for or expensed and which are not included in the comparison years. The other years shown in CA-IR-124 Attachment 1, columns (A) through (F), are actual hours expensed and do not include non-compensated merit excess labor resource expenses. Since the merit positions generally are not compensated for those hours they do not show up in actuals. The 3,343 Engineering overtime hours for 2007 listed in the response CA-IR-124 Attachment 1 page 1 column (H), lines 13, 15, and 18, will not be expensed since these merit employees are not compensated for their overtime. The 7,436 overtime hours shown on line 17, includes 2,202 hours of non-compensated merit labor overtime for RA MWP. As a result, the total overtime hours shown on line 19 should be considered to be 6,080 hours



when used to compare to previous year's actuals. Of the 6,080 overtime hours, 850 hours (line 14) are for BU senior customer clerks overtime necessary to process the majority of the joint pole applications that had not been completed since the elimination of the joint pole clerk position in 1999. Since 2006 the clerks have had to resort to scheduled overtime to address the backlog of joint pole applications, and will continue to incur overtime until such time as when the joint pole clerk position is filled, which currently there are no plans to do. The remainder of the overtime comes from BU positions contained in line 17, which amounts to 5,230 hours. The MWP BU portion of this work group had a 14% labor resource excess demand increase from 2004 to 2005, a 42% increase from 2005 to 2006, and a forecasted budgeted increase of 82% from 2006 for 2007. The increase in overtime hours is a function of the increased labor necessary to meet the demands and increasing complexity of customer projects, system projects, and blanket projects.

It should be noted that the additional employees added in 2007 are for merit positions. These merit employees will be performing the tasks applicable to merit positions and thus will not reduce the need for overtime required to complete tasks assigned to the bargaining unit employees.

- b. The T&D Capital and O&M labor hours forecasted for the test year as shown in the response to CA-IR-124, Attachment 2, page 1 of 1, which result in the labor percentage for each category, is the result of the budgeting process, as explained in the HECO T-6 and the responses to CA-IR-113, 233 and 234. The T&D labor hours charged to capital and O&M to date, through June 2007, are 42,990 and 51,798 respectively.

CA-IR-237

**Ref: MECO T-6, page 40 and Response to CA-IR-131 (One Call).**

At page 40, MECO T-6 identifies \$60,249 of additional One Call related labor and overhead costs included in the 2007 test year forecast (see MECO-WP-608B, page 1, and CA-IR-2, Attachment 6F page 10). The 2007 test year forecast also includes \$22,850 of non-labor costs. Please provide the following:

- a. Since the One Call legislation went into effect on January 1, 2006, has MECO been providing One Call support throughout 2006 and 2007? Please explain.
- b. Prior to January 1, 2006, did MECO field requests from excavators and contractors about marking the location of MECO's buried facilities? Please explain.
- c. Referring to the response to parts (a) and (b) above, please explain why it was necessary for MECO to increase its 2007 test year labor and non-labor forecast by about \$83,000 due to the implementation of One Call.
- d. Part (b) of the response to CA-IR-131 refers to "One Call Concepts, Inc." as the calling party. Who is "One Call Concepts, Inc." and what is their role in the implementation and application of the One Call concept?
- e. Has MECO maintained any data or statistical information regarding the number of calls for buried facility "locates" before and after the implementation of One Call? Please explain.
- f. Referring to part (e) above, please provide the identified statistical data for the period 2005 through the present.

**MECO Response:**

- a. Yes, MECO has been providing One Call service to its customers since January 1, 2006.  
  
One Call requests were light in 2006, but have increased in 2007 as contractors become more aware of the requirement.
- b. Prior to January 1, 2006, MECO did occasionally, when requested, provide locating service to contractors. While not required, contractors did call for locating services when they suspected their excavations might impact MECO's infrastructure. In addition, since many projects included some form of electrical service, contractors were made aware of

the location of MECO infrastructure by their MECO planner and/or by their consultant's drawings.

- c. MECO increased the 2007 test year labor budget for this activity due to the additional requirement to respond to requests generated by the One Call program. The 2007 test year non-labor budget reflects MECO's share of the One Call Center costs it anticipates receiving as described in the response to CA-IR-239. As a result of the One Call program, MECO anticipates receiving additional location service requests for all excavations, regardless of impact to MECO's infrastructure. This is a significant increase in the labor and non-labor costs for locating infrastructure than in prior years. Recently, pursuant to Order No. 23251, in Docket No. 05-0195, MECO requested and received approval to apply a portion of its annual PUC fee payment as a credit to offset its One Call Center fees. As a result, MECO anticipates requesting and receiving a credit for the \$22,850 non-labor expense for One Call fees that was included in the 2007 test year budget.
- d. "One Call Concepts, Inc." is the State vendor for coordinating the processing of the One Call job requests.
- e. No data was collected for infrastructure locating prior to the implementation of the One Call program. Currently, MECO is tracking hours and expense for all One Call program services.
- f. As stated in part e. above, no data was collected prior to the implementation of the One Call program on January 1, 2006. For 2006 MECO incurred 313 hours for a total labor expense of approximately \$33,000. For 2007 year to date as of June 30, 2007, MECO's

hours and labor expense were 412 hours and approximately \$40,000, which equates to an annualized estimated labor expense of \$80,000 and a projected annual increase of 142%. While MECO anticipates receiving a credit to its annual PUC fee payment to offset the budgeted \$22,850 non-labor expense, MECO has under budgeted the labor expense in the test year for the One Call program by approximately \$20,000.

CA-IR-238

**Ref: MECO T-6, page 40 and Response to CA-IR-131 (One Call).**

At page 40, MECO T-6 identifies \$60,249 of additional One Call related labor and overhead costs included in the 2007 test year forecast (see MECO-WP-608B, page 1, and CA-IR-2, Attachment 6F page 10). The 2007 test year forecast also includes \$22,850 of non-labor costs. Please provide the following:

- a. Prior to the implementation of One Call, did the Company experience occasional or frequent damage to its buried facilities because excavators and contractors failed to routinely contact MECO to mark its buried facilities prior to commencing work? Please explain:
- b. Since the implementation of One Call, has the Company experienced any reduction in the frequency of damage to its buried facilities because excavators and contractors have increasingly contacted MECO to mark its buried facilities prior to commencing work? Please explain.
- c. If the response to part (b) above is affirmative, does MECO's 2007 test year forecast recognize lower maintenance expense due to the reduced incidence of excavator or contractor damage? Please explain.
- d. If the response to part (c) above is affirmative, please provide a quantification of the expense reduction associated with the test year forecast.
- e. If the response to part (c) above is negative, please explain why MECO believes that the implementation of One Call should not be expected to reasonably result in reduced test year repair and maintenance costs.

**MECO Response:**

- a. Yes, MECO did occasionally experience damage to its buried facilities (referred to as "dig ins") prior to the implementation of the One Call program. As stated in the response to CA-IR-237, prior to the State's adoption of the One Call program, contractors were not required to call for locating services and only did so when they suspected MECO's infrastructure would be impacted by their excavations.

- b. "Dig ins" prior to the implementation of the One Call program were infrequent and as such, there is insufficient data to determine if the frequency has been reduced. The goal of the program however, is to eliminate "dig ins" and it is anticipated that the number of "dig ins" will be reduced as customers learn and execute their responsibilities under the One Call program.
- c. MECO did not adjust any expense element in the test year to reflect reduced expenses derived from the possible reduction of "dig ins" due to the fact that MECO is reimbursed by the responsible contractor for the expenses resulting from the "dig ins". Both the expense and offsetting reimbursement for "dig ins" are charged to Account No. 451.
- d. See response to part c. above.
- e. See response to part c. above.

CA-IR-239

**Ref: MECO T-6, page 40 and Response to CA-IR-132 (One Call).**

According to the referenced response, the \$22,850 non-labor expense included in the 2007 test year forecast for One Call was based on a different assumed cost sharing methodology than actually implemented by the Commission. Please provide the following:

- a. Please provide the amount actually billed to MECO for its share of the January-June 2007 One Call Center administration and operations cost.
- b. Does the \$3,360 MECO paid to the Commission for the One Call Center for the period July-December 2006 represent the current cost sharing methodology? Please explain.
- c. Please explain why MECO believes that the \$22,850 forecast estimate continues to represent a reasonable level of One Call non-labor costs.

**MECO Response:**

- a. MECO has not received any invoices from the One Call Center for 2007. The One Call Center invoices are sent in July and January, and the January invoice received this year was for the period July 1 through December 31, 2006.
- b. Yes, the \$3,360 MECO paid to the Commission is based on the current cost sharing methodology for One Call. The One Call fees are based on a cost/ticket methodology that takes the aggregate One Call Center cost divide by the total number of tickets for each six month period to determine the "per ticket" cost. The per ticket cost is then applied to all tickets that MECO processed to determine MECO's share of the One Call Center costs. The \$3,360 One Call Center administration fee paid in January 2007 for June-December 2006 was refunded to MECO. See response to CA-IR-237 (c).
- c. MECO believes that its forecasted test year estimate for One Call non-labor costs, which represent the One Call Center fees MECO anticipates receiving, is reasonable due to the increased number of location requests it anticipates in 2007 as a result of the

implementation of the One Call program. As stated in the response to CA-IR-237(c),  
MECO anticipates requesting and receiving approval to apply a portion of its annual PUC  
fee payment as a credit to offset its One Call Center fees.



CA-IR-240

**Ref: MECO T-6 Responses to CA-IR-2 and CA-IR-129 (EMS Project).**

After reviewing the response to CA-IR-129, it remains unclear how the work papers supplied in response to CA-IR-2, Attachment 6E (pages 38-47) support the new EMS amounts set forth on CA-IR-2, Attachment 5 (page 3, items 135-137). Please provide the following:

- a. Please provide additional documentation showing how the forecast amounts set forth on page 3 of Attachment 5 were derived.
- b. Referring to part (a) above, how were the amounts contained in the documents supplied in Attachment 6E adjusted or revised to derive the forecast amounts on page 3 of Attachment 5? Please explain and show all calculations.

**MECO Response:**

- a. There is no additional documentation showing how the forecasted amounts for items 135, 136, and 137 on page 3 of Attachment 5 were derived.
- b. The documentation supporting the cost listed in item 135 on page 3 of Attachment 5 was provided in Attachment 6E, pages 38-40, which is a quote from Areva for on-site support consultation with additional remote support hours. The Areva quote has an estimated total price of \$47,300 (see page 39 under Pricing). MECO plans on contracting with Areva for two on-site consultations and for twice the number of remote support hours as defined in the quote provided in attachment 6E, pages 38-40. An additional \$3,941.04 was added to line item 135 to cover the State's General Excise Tax (G.E.T). An additional \$3,958.96 was added to line item 135 to cover any other costs that may exceed the Areva other direct costs (ODC) estimate or other price increase. The calculation for item 135 on page 3 of Attachment 5 is: \$47,300 (Areva quote) x 2 (No. of on-site consultations and twice the amount of remote support hours) = \$94,600 + \$3,941

$(4.0166\% \text{ G.E.T.}) = \$98,541 + \$3,959$  (any other costs that may exceed the Areva ODC estimate) = \$102,500 (Total).

The documentation supporting the cost listed in item 136 on page 3 of Attachment 5 was provided in Attachment 6E, page 45, which is an estimated cost for purchasing and installing an Oracle 9i Parallel Server database for use as a database repository for eTerra-Archive (EMS History Service). The estimated cost for this is \$15,000. An additional \$375 was added to line item 136 to cover any potential price increase in licensing. The calculation for item 136 on page 3 of Attachment 5 is: \$15,000 (Licensing and installation costs) + \$375 (potential price increase in licensing) = \$15,375 (Total).

The documentation supporting the cost listed in item 137 on page 3 of Attachment 5 was provided in Attachment 6E, page 47, which is a quote provided to HELCO by Areva for consulting services on upgrading HELCO's Webserver and Firewall. The labor time for Areva to update, modify and verify the PIX Firewall was estimated at 12 hours at a labor rate of \$353 per hour. The hourly rate of \$353 is based on the rate provided in the HELCO quote (see page 47 under Cost Estimate). Work is to be done remotely and no on-site costs will be incurred. The calculation for item 137 on page 3 of Attachment 5 is:  $12 \text{ hours} \times \$353/\text{hour} = \$4,236 + \$176$  (4.0166% G.E.T.) + \$713 (potential price increase in hourly rate) = \$5,125 (Total).

CA-IR-241

**Ref: MECO-618 and Response to CA-IR-136 (T&D Inventory).**

In explaining why the December 2006 inventory balance is \$1.2 million higher than the balance at December 2005, CA-IR-136 indicates, in part, that a "material share of the increase is due to electrical cable and termination components, which have a lead time of about four months and six months, respectively. This lead time forces MECO to order materials in anticipation of projects before the final schedule for these projects is formalized." Please provide the following:

- a. Please identify the specific projects, whether expense or capital, associated with the increased electrical cable and termination component purchases.
- b. Referring to the response to part (a) above, were any of these projects completed and included in the determination of the 2007 forecast plant in service balance? Please explain.

**MECO Response:**

- a. The following projects are associated with the increased electrical cable and termination component purchases:

Highlands Estates Wells Pump

Ke Alii Villas

Kehalani Site 10

Kahului Airport Cable Upgrade

Kehalani South Collector Road

Kualapa Loop

Lanikeha Phase 1

Lanikeha Phase 2

Makena Circuit 1395 Extension

St. Francis Onsite

Waikapu Gardens Phase 4

- b. Of the above projects, the following-projects were completed or are estimated be completed in 2007 and were included in the determination of the 2007 forecast plant in service.

Highlands Estates Wells Pump

Ke Alii Villas

Kehalani Site 10

Kehalani South Collector Road

Kualapa Loop

St. Francis Onsite

Waikapu Gardens Phase 4

CA-IR-242

**Ref: MECO T-6 Response to CA-IR-2 (Roads and Trails).**

Referring to CA-IR-2, Attachment 5, page 3 (Item 134), the \$50,000 forecast to maintain roads and trails refers to Attachments 6B and 6E. With regard to Item 134, Attachment 6B indicates that the cost to maintain access to transmission facilities in mountain areas "increased by 10x from previous years in 2006 and trend will continue due to breakup of plantation land." It is unclear how the documentation supporting Item 134 supplied in response to CA-IR-2, Attachment 6E (page 37) supports the \$50,000 road and trail maintenance estimate. Please provide the following:

- a. Please explain how Attachment 6E (page 37) supports the \$50,000 estimate.
- b. Please provide additional support showing the derivation of the \$50,000 amount.
- c. Please provide additional support documenting the 10x increase in 2006 over prior years.

**MECO Response:**

- a. Attachment 6E (page 37) provides 2006 actuals of \$124,242.17, which exceed the 2007 budget estimate. This largely new expense was estimated at \$50K for 2007 based on estimated expenses to date at the time the 2007 budget was prepared in 2006. In addition, the 2007 year-to-date actual as of June 30, 2007 of \$99,851 has also exceeded the test year estimate.
- b. Since this was largely a new expense that will continue in the future, the only applicable budgeting tool to use at the time was current expenses and trending. Treating this as a new expense, the budget for 2007 was based on 2006 year-to-date estimated expenses when the 2007 budget was being formalized in 2006, which at the time suggested that \$50,000 was a reasonable estimate. Previously MECO had customer maintained access to its remote infrastructure. With the breakup and selling of plantation lands this is no longer the case and as individual developers develop these lands, the access become more restrictive and more expensive to maintain.

- c. When access was still in the condition maintained by the plantation owners, the average expense for the period of 2001 through 2005 was only \$5,935 a year. Based on the test year estimate of \$50,000, the statement was made in the comments section of the response to CA-IR-2, Attachment 6B, line 13, that the "cost increased by 10x from previous years. This statement was not based on a study or a quote, but rather on a comparison of the prior years' actuals to the test year estimate of \$50,000, which was based on the actuals that were being spent at the time the budget was formulated

CA-IR-243

**Ref: MECO T-6 Response to CA-IR-2 (Hardware, Software and Training).**

Referring to CA-IR-2, Attachment 13A, page 1 (Items 340-342), the \$180,000 forecast for hardware, software and training costs refers to Attachments 13B and 13E. Attachment 13B generally refers to "price quote" (Item 340) and "historical" (Items 341 and 342) as support for the forecast. The documentation supporting Items 340-342 supplied in response to CA-IR-2, Attachment 13E (page 12) provides actual costs for calendar year 2005, which totals about \$182,400. Please provide the following:

- a. Please explain the basis for the determination that the 2007 test year forecast should be equal to 2005 actual amounts.
- b. Please provide actual data for calendar years 2004 and 2006 that is comparable to the 2005 data relied upon by the Company.

**MECO Response:**

- a. Hardware and software costs are services required to maintain the functionality of MECO's equipment, as well as obtain vendor support and updates for the many software applications used by the company. It was estimated that those costs for the test year would be equal to or greater than the actual cost for the most recent recorded year (2005).
- b.

CB	Line item	BUDGET 2007	ACTUAL 2006	ACTUAL 2005	ACTUAL 2004
	IS283 Hardware Maintenance (ALL MECO)				
	IS284 Software Maintenance (all MECO)				
	IS505 ArcSDE Training				
MWI891MAUNENMDZZZZ501		\$180,000	\$176,113	\$182,390	\$102,680

CA-IR-244

**Ref: MECO-WP-711, Response to CA-IR-138 (Bad Debts).**

Please provide the following information regarding bad debts:

- a. For the monthly net write-off amounts shown in WP-711 or Attachment A to CA-IR-138, identify any individual account balances in excess of \$10,000 that were written off and explain the circumstances of such write-off.
- b. For the monthly net write-off amounts shown in column (a), identify any subsequent recoveries that were recorded in connection with any of the transactions listed in your response to part (a) of this information request and explain the circumstances of such recoveries.

**MECO Response:**

- a. See Attachment A for the net write-off amounts with individual account balances in excess of \$10,000 from 2001 to April 2007 that were presented in MECO-WP-711 and Attachment A to CA-IR-138. Explanations of the circumstances of the applicable write-offs, and any subsequent recoveries that were recorded with any of the transactions listed, including the circumstances of the recoveries, are also included in Attachment A.
- b. See the response to part (a) above.



**WRITE-OFFS > \$10,000**

**2001**

<b>Date</b>	<b>Account Number</b>	<b>Amount</b>	<b>Recovered Date</b>	<b>Recovered Amount</b>	<b>Rate</b>	<b>Write-off Reason</b>	<b>Recovery Reason</b>
1/4/2001	8700-9361-001	10,359.56	5/20/2004	1,354.43	J	Bankruptcy	10% bankruptcy settlement
7/19/2001	9700-4604-001	10,475.36		-	J	Cutoff for nonpayment. Per attorney, subsequent bankruptcy filing.	
11/27/2001	9300-6360-006	14,507.35	12/19/2006	14,507.35	J	No response from customer.	Attorney pursuit
<b>Totals</b>		<b>35,342.27</b>		<b>15,861.78</b>			

**WRITE-OFFS > \$10,000**

**2002**

<b>Date</b>	<b>Account Number</b>	<b>Amount</b>	<b>Recovered Date</b>	<b>Recovered Amount</b>	<b>Rate</b>	<b>Write-off Reason</b>	<b>Recovery Reason</b>
3/6/2002	8700-9122-001	10,057.38	1/6/2003	10057.38	J	Bankruptcy	Bankruptcy settlement.
5/7/2002	8700-8756-001	12,115.62		-	J	Bankruptcy	
11/14/2002	9300-2437-001	50,700.73	6/7/2004	6,982.16	P	Bankruptcy	Sale of 137 shares @ \$51.0377/share-less fees.
			8/16/2004	1,472.17			Sale of 20 shares @ \$74.1083/share-less fees.
			6/30/2005	1,464.64			Sale of 10 shares-less fees.
			1/9/2006	17.07			MECO pro-rata share of net trust recoveries.
			3/15/2006	2,384.53			Sale of 20 shares @ \$119.9763/share-less fees.
			6/20/2007	1,745.65			\$176.184601/share-less fees.
<b>Totals</b>		<b>72,873.73</b>		<b>17,039.54</b>			

**WRITE-OFFS > \$10,000**

**2003**

<b>Date</b>	<b>Account Number</b>	<b>Amount</b>	<b>Recovered Date</b>	<b>Recovered Amount</b>	<b>Rate</b>	<b>Write-off Reason</b>	<b>Recovery Reason</b>
10/15/2003	9800-1050-001	12,352.42		-	K	Per attorney, not worthwhile to pursue collection.	
	<b>Totals</b>	12,352.42		0.00			

WRITE-OFFS > \$10,000

2004

Date	Account Number	Amount	Recovered Date	Recovered Amount	Rate	Write-off Reason	Recovery Reason
10/7/2004	8703-5386-003	\$13,714.01		-	J	Bankruptcy	Bankruptcy dismissed. Per attorney, business closed. Unable to locate principals.
	Totals	13,714.01		0.00			

WRITE-OFFS > \$10,000

2005

Date	Account Number	Amount	Recovered Date	Recovered Amount	Rate	Write-off Reason	Recovery Reason
	Totals	0.00		0.00			

WRITE-OFFS > \$10,000

2006

Date	Account Number	Amount	Recovered Date	Recovered Amount	Rate	Write-off Reason	Recovery Reason
7/27/2006	8702-8295-008	\$12,541.23		-	J	Bankruptcy	
	Totals	\$12,541.23		\$0.00			

WRITE-OFFS > \$10,000

2007

Date	Account Number	Amount	Recovered Date	Recovered Amount	Rate	Write-off Reason	Recovery Reason
	Totals	\$0.00		\$0.00			

CA-IR-245

**Ref: Response to CA-IR-139, Attachment A (Temporary Facilities).**

Please provide the following additional information regarding Temporary Facilities revenues:

- a. Explain the types of transactions that produce negative revenues in certain years and describe how such circumstances were estimated for the test year projections.
- b. Provide detailed workpapers stating all assumptions and calculations supportive of test year proposed revenues by Division.

**MECO Response:**

- a. The types of transactions that produce negative Temporary Facilities revenues in certain years are related to providing temporary services to the Company's customers where a line extension or transformer installation is required for their applicable construction projects. Specifically, in order to provide these types of temporary services, MECO Engineering will prepare an estimated cost of the facilities needed to be installed. Rule 12.1 of the Company's tariff states, "*The applicant shall make an advance prior to construction of the facilities necessary for furnishing service or otherwise as required by the Company, of the estimated cost installed plus estimated cost of removal, less estimated salvage, of the additional facilities necessary for furnishing service.*" As such, the estimated cost is paid by the customer in advance of the Company's installation of the necessary facilities for furnishing service. When the collection of the funds paid by the customer in advance to install the service is less than the actual cost to perform the work, the Company will experience a negative value as reported in 2005 and 2006 on MECO-WP-712.

The above circumstances were not specifically estimated in the test year amount. Instead, the test year estimate was computed by estimating 2006 with the historical five-year average (2001-2005), then escalating the 2006 amount by two (2) percent.

- b. See Attachment A for the detailed workpapers, which support the methodology to estimate the test year proposed revenues by Division, as explained in the response to part (a) above.



Maui Electric Company, Limited

CONSOLIDATED OTHER OPERATING REVENUE (\$)  
2001-2007  
PRESENT RATES

<u>Line</u>		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>F</u>
	<u>ACCOUNT</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>Estimate</u> <u>2006</u>	<u>2007</u>
		-----Recorded----->						
	450-OTHER REVENUES							
1	Field Collection Charge	38,300	38,368	47,353	34,605	19,785	32,850	36,750
2	Returned Check Charge	11,400	10,990	12,100	12,250	12,120	11,900	13,100
3	Late Payment Charge for OCARS	0	0	0	0	0	0	0
4	Late Payment Charge for Energy Bills	<u>246,391</u>	<u>196,260</u>	<u>215,341</u>	<u>231,256</u>	<u>277,830</u>	<u>321,300</u>	<u>296,000</u>
5	Total	296,091	245,618	274,794	278,111	309,735	366,050	345,850
	451-MISC. SERVICE REVENUES							
6	Svc. Establishment Charge	187,525	186,460	198,730	200,765	207,815	208,500	218,250
7	Reconnection-Restoration	19,590	20,115	17,200	15,150	8,395	11,220	12,920
8	Temporary Facilities	106,189	82,972	123,303	96,958	-43,253	72,800	73,800
9	Revenue Protection	13,207	1,642	43,506	0	158	12,000	12,000
10	Other	<u>-47,380</u>	<u>-15,271</u>	<u>17,758</u>	<u>-15,815</u>	<u>13,780</u>	<u>0</u>	<u>0</u>
11	Total	279,131	275,918	400,497	297,058	186,895	304,520	316,970
12	454-RENTS	<u>769,612</u>	<u>786,071</u>	<u>813,255</u>	<u>819,450</u>	<u>827,778</u>	<u>853,561</u>	<u>869,900</u>
13	TOTAL ACCOUNTS	1,344,834	1,307,607	1,488,546	1,394,619	1,324,408	1,524,131	1,532,720

SOURCE:

<sup>1</sup> MECO-WP-712, pages 3,5 and 7

Maui Electric Company, Limited

CONSOLIDATED OTHER OPERATING REVENUE (\$)  
2001-2007  
PROPOSED RATES

Line		A	B	C	D	E	F	F
	ACCOUNT	2001	2002	2003	2004	2005	Estimate 2006	2007
	450-OTHER REVENUES							
1	Field Collection Charge	38,300	38,368	47,353	34,605	19,785	32,850	61,250
2	Returned Check Charge	11,400	10,990	12,100	12,250	12,120	11,900	32,750
3	Late Payment Charge for OCARS	0	0	0	0	0	0	0
4	Late Payment Charge for Energy Bills	<u>246,391</u>	<u>196,260</u>	<u>215,341</u>	<u>231,256</u>	<u>277,830</u>	<u>321,300</u>	<u>313,000</u>
5	Total	296,091	245,618	274,794	278,111	309,735	366,050	407,000
	451-MISC. SERVICE REVENUES							
6	Svc. Establishment Charge	187,525	186,460	198,730	200,765	207,815	208,500	369,150
7	Reconnection-Restoration	19,590	20,115	17,200	15,150	8,395	11,220	23,260
8	Temporary Facilities	106,189	82,972	123,303	96,958	-43,253	72,829	73,810
9	Revenue Protection	13,207	1,642	43,506	0	158	12,000	12,000
10	Other	<u>-47,380</u>	<u>-15,271</u>	<u>17,758</u>	<u>-15,815</u>	<u>13,780</u>	<u>0</u>	<u>0</u>
11	Total	279,131	275,918	400,497	297,058	186,895	304,549	478,220
12	454-RENTS	<u>769,612</u>	<u>786,071</u>	<u>813,255</u>	<u>819,450</u>	<u>827,778</u>	<u>803,897</u>	<u>869,900</u>
13	TOTAL ACCOUNTS	1,344,834	1,307,607	1,488,546	1,394,619	1,324,408	1,474,496	1,755,120

SOURCE:

<sup>1</sup> MECO-WP-712, pages 4,6 and 8

Maui Electric Company, Limited  
Maui Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PRESENT RATES

Line		A	B	C	D	E	F	F
	ACCOUNT	2001	2002	2003	2004	2005	Estimate 2006	Estimate 2007
	450-OTHER REVENUES							
1	Field Collection Charge	29,270	32,983	39,733	30,150	14,205	25,500	28,500
2	Returned Check Charge	10,790	10,260	11,160	11,420	11,310	11,000	12,000
3	Late Payment Charge for OCARS	0	0	0	0	0	0	0
4	Late Payment Charge for Energy Bills	<u>215,248</u>	<u>175,449</u>	<u>192,554</u>	<u>213,980</u>	<u>255,137</u>	<u>299,500</u>	<u>267,100</u>
5	Total	255,308	218,692	243,447	255,550	280,652	336,000	307,600
	451-MISC. SERVICE REVENUES							
6	Svc. Establishment Charge	174,800	174,505	186,010	189,260	196,850	195,500	202,500
7	Reconnection-Restoration	19,240	19,375	16,785	14,260	7,685	10,400	12,000
8	Temporary Facilities	108,764	84,021	121,473	99,179	-41,324	74,000	75,000 escal
9	Revenue Protection	13,207	1,642	43,506	0	158	12,000	12,000 escal
10	Other	<u>-47,380</u>	<u>-15,271</u>	<u>17,758</u>	<u>-15,815</u>	<u>13,780</u>	<u>0</u>	<u>0</u>
11	Total	268,631	264,272	385,532	286,884	177,149	291,900	301,500
12	454-RENTS	<u>686,584</u>	<u>703,043</u>	<u>724,328</u>	<u>731,005</u>	<u>744,024</u>	<u>765,161</u>	<u>780,000</u> escal
13	TOTAL ACCOUNTS	1,210,523	1,186,007	1,353,307	1,273,439	1,201,825	1,393,061	1,389,100

SOURCE:

<sup>1</sup> MECO-WP-712, pages 9, 12, 15, 18 and 21

Maui Electric Company, Limited  
Maui Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PROPOSED RATES

Line		A	B	C	D	E	F	F
	ACCOUNT	2001	2002	2003	2004	2005	2006	2007
	450-OTHER REVENUES							
1	Field Collection Charge	29,270	32,983	39,733	30,150	14,205	25,500	47,500
2	Returned Check Charge	10,790	10,260	11,160	11,420	11,310	11,000	30,000
3	Late Payment Charge for OCARS	0	0	0	0	0	0	0
4	Late Payment Charge for Energy Bills	<u>215,248</u>	<u>175,449</u>	<u>192,554</u>	<u>213,980</u>	<u>255,137</u>	<u>299,500</u>	<u>280,800</u>
5	Total	255,308	218,692	243,447	255,550	280,652	336,000	358,300
	451-MISC. SERVICE REVENUES							
6	Svc. Establishment Charge	174,800	174,505	186,010	189,260	196,850	195,500	342,500
7	Reconnection-Restoration	19,240	19,375	16,785	14,260	7,685	10,400	20,100
8	Temporary Facilities	108,764	84,021	121,473	99,179	-41,324	74,000	75,000 escal
9	Revenue Protection	13,207	1,642	43,506	0	158	12,000	12,000 escal
10	Other	<u>-47,380</u>	<u>-15,271</u>	<u>17,758</u>	<u>-15,815</u>	<u>13,780</u>	<u>0</u>	<u>0</u>
11	Total	268,631	264,272	385,532	286,884	177,149	291,900	449,600
12	454-RENTS	<u>686,584</u>	<u>703,043</u>	<u>724,328</u>	<u>731,005</u>	<u>744,024</u>	<u>718,000</u>	<u>780,000</u> escal
13	TOTAL ACCOUNTS	1,210,523	1,186,007	1,353,307	1,273,439	1,201,825	1,345,900	1,587,900

SOURCE:

<sup>1</sup> MECO-WP-712, pages 9, 12, 15, 18 and 21

Maui Electric Company, Limited  
Lanai Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PRESENT RATES

Line		A	B	C	D	E	F	F
	ACCOUNT	2001	2002	2003	2004	2005	Estimate 2006	Estimate 2007
	450-OTHER REVENUES							
1	Field Collection Charge	870	510	1,125	630	15	600	750
2	Returned Check Charge	300	300	270	240	190	300	400
3	Late Payment Charge	<u>12,211</u>	<u>5,719</u>	<u>9,191</u>	<u>5,008</u>	<u>6,064</u>	<u>7,100</u>	<u>9,900</u>
	Total	13,381	6,529	10,586	5,878	6,269	8,000	11,050
	451-MISC. SERVICE REVENUES							
4	Svc. Establishment Charge	5,340	5,385	5,465	4,290	4,635	5,750	7,500
5	Reconnection-Restoration	120	435	135	435	135	300	300
6	Temporary Facilities	-4,079	-1,249	2,493	1326	418	-200	-200 escal
7	Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u> escal
8	Total	1,381	4,571	8,093	6,051	5,188	5,850	7,600
9	454-RENTS	<u>18,612</u>	<u>18,612</u>	<u>18,513</u>	<u>18,480</u>	<u>18,480</u>	<u>18,884</u>	<u>19,000</u> escal
10	TOTAL ACCOUNTS	33,374	29,712	37,192	30,409	29,937	32,734	37,650

SOURCE:

<sup>1</sup> MECO-WP-712, pages 10, 13, 16, 18 and 21

Maui Electric Company, Limited  
Lanai Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PROPOSED RATES

<u>Line</u>		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>F</u>
	<u>ACCOUNT</u>	<-----Recorded----->					Estimate	Estimate
		<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
	450-OTHER REVENUES							
1	Field Collection Charge	870	510	1,125	630	15	600	1,250
2	Returned Check Charge	300	300	270	240	190	300	1,000
3	Late Payment Charge	<u>12,211</u>	<u>5,719</u>	<u>9,191</u>	<u>5,008</u>	<u>6,064</u>	<u>7,100</u>	<u>12,200</u>
4	Total	13,381	6,529	10,586	5,878	6,269	8,000	14,450
	451-MISC. SERVICE REVENUES							
5	Svc. Establishment Charge	5,340	5,385	5,465	4,290	4,635	5,750	12,700
6	Reconnection-Restoration	120	435	135	435	135	300	500
7	Temporary Facilities	-4,079	-1,249	2,493	1326	418	-200	-200 escal
8	Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u> escal
9	Total	1,381	4,571	8,093	6,051	5,188	5,850	13,000
10	454-RENTS	<u>18,612</u>	<u>18,612</u>	<u>18,513</u>	<u>18,480</u>	<u>18,480</u>	<u>19,000</u>	<u>19,000</u> escal
11	TOTAL ACCOUNTS	33,374	29,712	37,192	30,409	29,937	32,850	46,450

SOURCE:

<sup>†</sup> MECO-WP-712, pages 10, 13, 16, 18 and 21

Maui Electric Company, Limited  
Molokai Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PRESENT RATES

<u>Line</u>		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>F</u>
	<u>ACCOUNT</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
		-----Recorded-----					Estimate	Estimate
	450-OTHER REVENUES							
1	Field Collection Charge	8,160	4,875	6,495	3,825	5,565	6,750	7,500
2	Returned Check Charge	310	430	670	590	620	600	700
3	Late Payment Charge	<u>18,932</u>	<u>15,092</u>	<u>13,596</u>	<u>12,268</u>	<u>16,629</u>	<u>14,700</u>	<u>19,000</u>
4	Total	27,402	20,397	20,761	16,683	22,814	22,050	27,200
	451-MISC. SERVICE REVENUES							
5	Svc. Establishment Charge	7,385	6,570	7,255	7,215	6,330	7,250	8,250
6	Reconnection-Restoration	230	305	280	455	575	520	620
7	Temporary Facilities	1,504	200	-663	-3,547	-2,347	-1,000	-1,000 escal
8	Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u> escal
9	Total	9,119	7,075	6,872	4,123	4,558	6,770	7,870
10	454-RENTS	<u>64,416</u>	<u>64,416</u>	<u>70,414</u>	<u>69,965</u>	<u>65,274</u>	<u>69,516</u>	<u>70,900</u> escal
11	TOTAL ACCOUNTS	100,937	91,888	98,047	90,771	92,646	98,336	105,970

SOURCE:

<sup>1</sup> MECO-WP-712, pages 11, 14, 17, 20 and 22

Maui Electric Company, Limited  
Molokai Division

OTHER OPERATING REVENUE (\$)  
2001-2007  
PROPOSED RATES

Line		A	B	C	D	E	F	F	
		<-----Recorded----->				Estimate		Estimate	
	ACCOUNT	2001	2002	2003	2004	2005	2006	2007	
	450-OTHER REVENUES								
1	Field Collection Charge	8,160	4,875	6,495	3,825	5,565	6,750	12,500	
2	Returned Check Charge	310	430	670	590	620	600	1,750	
3	Late Payment Charge	<u>18,932</u>	<u>15,092</u>	<u>13,596</u>	<u>12,268</u>	<u>16,629</u>	<u>14,700</u>	<u>20,000</u>	
4	Total	27,402	20,397	20,761	16,683	22,814	22,050	34,250	
	451-MISC. SERVICE REVENUES								
5	Svc. Establishment Charge	7,385	6,570	7,255	7,215	6,330	7,250	13,950	
6	Reconnection-Restoration	230	305	280	455	575	520	2,660	
7	Temporary Facilities	1,504	200	-663	-3,547	-2,347	-971	-990	2.3%
8	Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	2.3%
9	Total	9,119	7,075	6,872	4,123	4,558	6,799	15,620	
10	454-RENTS	<u>64,416</u>	<u>64,416</u>	<u>70,414</u>	<u>69,965</u>	<u>65,274</u>	<u>66,897</u>	<u>70,900</u>	2.3%
11	TOTAL ACCOUNTS	100,937	91,888	98,047	90,771	92,646	95,746	120,770	

SOURCE:

<sup>1</sup> MECO-WP-712, pages 11, 14, 17, 20 and 22



CA-IR-246

**Ref: Response to CA-IR-140 (Support for HECO Charges).**

The referenced IR requested "complete copies of HECO forecast calculations, stating assumptions and allocation procedures employed to estimate and allocate among HECO/MECO and HELCO." However, only copies of Intercompany Service Forms and a one page memo were provided. Please provide the following additional information:

- a. Calculations required to reconcile each amounts shown on CA-IR-2, Attachment B, page 47 into the Intercompany Service forms.
- b. Additional calculation details to illustrate how HECO developed each element of the forecasted expense data and allocations of such amounts to MECO supportive of each amount for the test year.
- c. Actual amounts billed to MECO, do date, for each line item of expense shown on CA-IR-2, Attachment B, page 47.
- d. Explanations of any significant variances in the year to date actual ICB charges provided in your response to part (c) of this information request and the proposed test year amounts.

**MECO Response:**

- a. Calculations to reconcile each amount shown on CA-IR-2, MECO T-7, Attachment B, page 47 are shown as follows:

PCP Postage to Mail Customer Bills - See Attachment A, Line Item MAU

POSTAGE, which shows the total estimate including the revision for the proposed postage rate increase in 2007. See also Attachment B regarding the postage increase.

PCP Processing Payments - See Attachment C, page 1, for the labor hours that correspond to the input to calculations for Processing Payments found in MECO's response to CA-IR-140, Attachment A, page 2. See Attachment C, page 2, for the estimate modified slightly for updated hourly rates and on-costs.

PCP Processing Trouble Mail - See Attachment C for the labor hours that correspond to the input to calculations for Processing Trouble Mail found in MECO's response to CA-IR-140, Attachment A, page 2. See Attachment C, page 2, for the estimate modified slightly for updated hourly rates and on-costs.

PCA Standard Register Forms - See Attachment D. The allocated amount to MECO shows \$17,212 which represents the base cost of the Standard Register forms. An on-cost of 11.05% for HECO Stores handling is added on to this base cost which brings the total cost to MECO to \$19,114 as it appears on CA-IR-2, MECO T-7, Attachment B, page 47.

- b. There are no other additional calculation details as requested.
- c. See Attachment E for the actual amounts billed to the Company through May 2007, for each line item of expense shown on CA-IR-2, MECO T-7, Attachment B, page 47, and explanations of any significant variances in the year to date actual ICB charges and the proposed test year amounts.
- d. See the response to part (c) above.

## Resp Area (RA)

**CP**

Prepared by S Olson

Date 03/07/06  
6/1/2006 Upd

Dimension tab card									Rates tab card		Units tab card												
Line Item	NARUC	RA	Act	Loc	Ind	Proj	EE	Lbr Class	Rates Link To	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
(enter Dollars or Vehicle Hours in "Units tab card")																							
Bill Envelopes		903	CP	614	OAH	NE	NPCZZZZZ	201		11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	132,000	
OAH POSTAGE		903	CP	614	OAH	NE	NPCZZZZZ	640		97,250	97,250	97,250	97,250	97,250	97,250	97,250	97,250	97,250	97,250	97,250	97,250	1,167,000	
5/106 Update										7,302	7,293	7,293	7,293	7,293	7,293	7,293	7,293	7,293	7,293	7,293	7,293	87,532	
Total										104,552	104,543	104,543	104,543	104,543	104,543	104,543	104,543	104,543	104,543	104,543	104,543	1,254,532	
HAN POSTAGE		903	CP	614	HAN	BE	NPCZZZZZ	640		23,516	23,514	23,514	23,514	23,514	23,514	23,514	23,514	23,514	23,514	23,514	23,514	282,170	
5/106 Update										1,770	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	21,163	
Total										25,286	25,277	25,277	25,277	25,277	25,277	25,277	25,277	25,277	25,277	25,277	25,277	303,333	
MAU POSTAGE		903	CP	614	MAU	BE	NPCZZZZZ	640		119,500	119,501	119,501	119,501	119,501	119,501	119,501	119,501	119,501	119,501	119,501	119,501	1,438,000	
5/106 Update										1,473	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	17,832	
MAINT - Waunau Maint & Software Support		903	CP	616	OAH	NE	NPCZZZZZ	600														76,300	
MAINT-OPEX		903	CP	616	OAH	NE	NPCZZZZZ	600								4,200						4,200	
MAINT-Misc (Guns, PF Elec, Ad Mco Image)		903	CP	616	OAH	NE	NPCZZZZZ	600				740				560					200	1,500	
PCP 616 - 600 Equipment Maintenance Total																			82,000				
OS-BOM ABF Fee		903	CP	616	OAH	NE	NPCZZZZZ	501		6,163	6,167	6,167	6,167	6,167	6,167	6,167	6,167	6,167	6,167	6,167	6,167	74,000	
OS-BOM Prc Check Fee (New)		903	CP	616	OAH	NE	NPCZZZZZ	501		3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000	
OS-Checkfare		903	CP	616	OAH	NE	NPCZZZZZ	501		7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	86,400	
OS-Pay Agents		903	CP	616	OAH	NE	NPCZZZZZ	501		6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	72,000	
OS-Armored Car		903	CP	616	OAH	NE	NPCZZZZZ	501		500	500	500	500	500	500	500	500	500	500	500	500	6,000	
OS-ABP Bill Insura		903	CP	616	OAH	NE	NPCZZZZZ	501														0	
OS-PO Box Rental & Service		903	CP	616	OAH	NE	NPCZZZZZ	501								170	675					1,045	
PCP 616 - 501 Outside Service Total																			273,445				
OS-Temp Hire		903	CP	616	OAH	NE	NPCZZZZZ	503		4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	57,000	
PCP 616 - 503 Temp Hire																			57,000				
Pymt ENVELOPES		903	CP	616	OAH	NE	NPCZZZZZ	201		9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	117,600	
Pymt Proc Supplies		903	CP	616	OAH	NE	NPCZZZZZ	201		1,350	1,350	1,356	1,356	1,356	1,356	1,356	1,356	1,356	1,356	1,356	1,356	16,280	
Cx Proc Imaging Software Upgrade		903	CP	617	OAH	NE	NPCZZZZZ	201				50,000										50,000	
PCP 616 - 201 Materials Total																			133,848				
Office Supplies		903	CP	616	OAH	NE	NPCZZZZZ	205		1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	15,600	
Emp Training		903	CP	789	PHE	NE	NPCZZZZZ	501			800					800				800		2,400	
																					</		

CA-IR-120

**Ref: CA-IR-2, HECO T-8, Attachment 2, page 66 - (OAH Postage).**

The referenced document indicates certain assumptions and a projected amount for 2007 billing postage. Please provide the following:

- Detailed assumptions and calculations supportive of the \$1,254,525 postage expense estimate.
- Referring to the response to part (a) above, please identify the specific postage price changes and effective dates that were assumed, as well as comparable actual postage rate change data.

**HECO Response:**

- Please note that page 66 does not exist for Ref: CA-IR-2, HECO T-8, Attachment 2, page 66 (OAH Postage).

It was assumed that the referenced page was 16.

Assumptions and calculations that support the 2007 test year estimate for postage expense are provided below.

The estimate was based on the forecast of 2006 postage expense then increased for growth in customers and an anticipated postage rate increase.

**2006 Postage Forecast - HECO**

<b>2005 Forecast</b>	<b>+</b>	<b>1% 2006 Forecasted Increase in Customers</b>	<b>=</b>	<b>Original 2006 Postage forecast (rounded to nearest thousand)</b>	<b>+</b>	<b>6% USPS Forecasted Increase</b>	<b>=</b>	<b>2006 Forecast</b>
\$1,068,588		\$10,686		\$1,079,274		\$64,756		\$1,144,030

**2007 Postage Forecast - HECO**

<b>2006 Forecast</b>	<b>+</b>	<b>2% 2007 Forecasted Increase in Customers</b>	<b>=</b>	<b>Original 2007 Postage forecast (rounded to nearest thousand)</b>	<b>+</b>	<b>7.5% USPS Forecasted Increase</b>	<b>=</b>	<b>2007 Forecast</b>
\$1,144,030		\$22,881		\$1,167,000		\$87,525		\$1,254,525

Original 2006 Forecast (as of 06/05): 2006 Forecast + 2% customer increase = \$1,166,911 (rounded to \$1,167,000)

3/2006 Update: Increased by 7.5% due to United States Postal Service increase (\$1,254,525)

- b. In Spring 2006, Customer Service was advised by USPS that the 1<sup>st</sup> class postage rate would increase from \$0.39 to \$0.42 and presorted 1<sup>st</sup> class postage would increase from \$0.293 to \$0.312, a 7.7% and 6.5% increase, respectively. The postal rate changes were assumed to take place in Spring of 2007. As a result, Customer Services believed that a 7.5% annual increase for year 2007 to reflect these rate increases would be reasonable.

**Proposed USPS Postage Rates for 2007**

Type	Current	Proposed	% Change
First Class Postage	\$0.39	\$0.42	7.69%
Presorted First Class Postage	\$0.293	\$0.312	6.48%



FOR IMMEDIATE RELEASE  
May 3, 2006

**POSTAL NEWS**

Contact: Media Relations  
202-268-2155  
Release No. 06-031  
www.usps.com

**Postal Service Seeks Price Adjustments**

Governors propose "forever stamp"

- Price for a First-Class stamp stays at 39 cents for another year
- Postal Service not immune to rising fuel and health care costs
- Average household affected by only 50 cents per month

WASHINGTON – The Governors of the U.S. Postal Service today proposed a "forever stamp" as part of a broader rate adjustment plan that would be scheduled to go into effect next year. Customers would be able to purchase a special First-Class stamp which would be good for any future single-piece First Class letter mailing, no matter how prices might change beyond 2007.

"A forever stamp would help ease the transition to any future price adjustments," said Board of Governors Chairman James C. Miller III.

On the broader plan, the Governors cited increasing costs for fuel and health care as among the reasons for today's filing with the independent Postal Rate Commission (PRC) for price adjustments next year. The plan includes a three-cent increase in the price of a First-Class stamp. The annual effect is well below \$1 for the average household.

"The Postal Service is not immune to the cost pressures affecting every household and business in America," said Postmaster General John E. Potter. "However, by the time new rates take effect next Spring, the cost of a First-Class stamp will have increased by an average of just a penny a year during the last five years, less than many other consumer products and services.

As one of the nation's largest transportation and delivery organizations, the Postal Service is extremely sensitive to rising energy costs. It operates a fleet of more than 260,000 delivery vehicles, supported by air transportation contracts, more than 17,000 long-haul surface transportation contracts and a network of more than 37,000 facilities.

Like other businesses, the Postal Service has also experienced significant growth in health benefit payments for more than 621,000 current employees and 445,000 retirees. In 2005 alone, these costs increased by \$437 million, reaching a total of \$6.6 billion.

When new rates are implemented in 2007, the price of a stamp will have grown at or below the rate of inflation since the last operational rate adjustment in 2002 – and since today's Postal Service began operations in 1971.

Postal Service operations are funded solely by the sale of products and services, not by tax revenues. While other delivery services have responded to growing costs with fuel surcharges and annual rate increases, today's filing is the first time since 2002 that the Postal Service is proposing to adjust rates to cover growth in operational costs. A January 2008 rate increase was implemented solely to fund a \$3.1 billion escrow account required by a 2003 federal law. Congress has not yet determined how the Postal Service may apply these funds.

-30-

Since 1775, the United States Postal Service and its predecessor, the Post Office Department, have connected friends, families, neighbors and businesses by mail. An independent federal agency that visits more than 144 million homes and businesses every day, the Postal Service is the only service provider delivering to every address in the nation. It receives no taxpayer dollars for routine operations, but derives its operating revenues solely from the sale of postage, products and services. With annual revenues of \$70 billion, it is the world's leading provider of mailing and delivery services, offering some of the most affordable postage rates in the world. The U.S. Postal Service delivers more than 40 percent of the world's mail volume—some 212 billion letters, advertisements, periodicals and packages a year—and serves seven million customers each day at its 37,000 retail locations nationwide.

# # # #

Labor Input Sheet - NonProject  
2007

Resp Area (RA)  
Labor Class

CP  
BUOC

Prepared by S. Olson  
Date 3/7/2008

Dimension tab card								Rates tab card		Units tab card												
Line Item	NARUC	RA	Act	Loc	Ind	Proj	EE	Labor Class	Rates Link To	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Labor Supply:</b> (enter employee count in "Units tab card")																						
Labor Supply		CP						Supply	BUOC	Available Hours	16	16	16	16	16	16	16	16	16	16	16	192
											16	16	16	16	16	16	16	16	16	16	16	192
<b>Labor Demand:</b> (enter hours in "Units tab card")																						
Holiday		CP	006	PHE	ND			107	BUOC	BUOC	128	128	128	128	128	128	128	128	128	128	128	1,536
Vacation (104 hrs per se)		CP	006	PHE	ND			107	BUOC	BUOC	148	148	148	148	148	148	148	148	148	148	148	1,776
Other NPW		CP	006	PHE	ND			107	BUOC	BUOC												0
Workers Comp		CP	006	PHE	ND			106	BUOC	BUOC												0
HECSD Tel Opr	Disable	CP	600	HEI	BE	NPC22222		150	BUOC	BUOC	45	45	45	45	45	45	45	45	45	45	45	540
HECO Resp to Cust Inq	903	CP	600	OAH	NE	NPC22222		150	BUOC	BUOC	450	450	450	450	450	450	450	450	450	450	450	5,400
HECO Mng Cust Acct Info	Disable	CP	604	OAH	NE	NPC22222		150	BUOC	BUOC	60	60	60	60	60	60	60	60	60	60	60	720
HECO Mng Cust Acct Info	Disable	CP	604	OAH	NE	NPC22222		150	BUOC	BUOC	67	67	67	67	67	67	67	67	67	67	67	804
HECO Mng Cust Acct Info	903	CP	604	OAH	NE	NPC22222		150	BUOC	BUOC	650	650	650	650	650	650	650	650	650	650	650	7,800
Mng/Resolve Billing Proc	903	CP	611	OAH	NE	NPC22222		150	BUOC	BUOC	100	100	100	100	100	100	100	100	100	100	100	1,200
Proc OCARs Pymts	903	CP	612	OAH	NE	NPC22222		150	BUOC	BUOC	30	30	30	30	30	30	30	30	30	30	30	360
Proc Cust Adv Refunds	903	CP	613	OAH	NE	NPC22222		150	BUOC	BUOC	15	15	15	15	15	15	15	15	15	15	15	180
HECO Proc Pymts	Disable	CP	616	OAH	NE	NPC22222		150	BUOC	BUOC	10	10	10	10	10	10	10	10	10	10	10	120
HECO Proc Pymts	Disable	CP	616	OAH	NE	NPC22222		150	BUOC	BUOC	64	64	64	64	64	64	64	64	64	64	64	768
HECO Proc Pymts	903	CP	616	OAH	NE	NPC22222		150	BUOC	BUOC	1,034	736	1,122	866	1,123	970	993	1,120	178	1,122	866	10,870
Maintain GL & Stat Info	CP	618	PHE	NE	NPC22222			150	BUOC	BUOC	10	10	10	10	10	10	10	10	10	10	10	120
Total NonProjPgm Demand										2,856	2,560	2,816	2,688	2,944	2,688	2,816	2,944	2,000	2,944	2,816	2,688	32,780
Total Supply										2,944	2,560	2,816	2,688	2,944	2,688	2,816	2,944	2,560	2,944	2,816	2,688	33,408

Holidays - 1/1, 2/19, 4/6, 5/28, 6/11, 7/4, 8/17, 9/3, 10/6, 11/12, 11/22, 12/24 (12), 12/25, 12/31 (12)

0 104

Available hours per employee

184 180 176 168 184 168 176 184 160 184 176 168 2088

NOTE: Total NonProject Demand hours may NOT equal Total Supply hours due to Project Demand hours (which are budgeted in the Project file)

2,580 2,284 2,868 2,412 2,868 2,518 2,540 2,868 1,726 2,870 2,414 2,288 29,432

7/9/2007

PV620 MAU Billable 2007

9:04AM

*RA #	*Loc #	Acct Grp Descr	*Act #	Cost Categ...	*EE #	FY07 ViewBud07
PCP	MAU	Billable	604	LABOR	150	810
						\$19,602
						\$19,602
						0
						\$19,602
				OVERHEADS	406	\$3,029
						0
					421	\$3,451
						0
					422	\$10,020
					423	\$1,603
						\$18,103
						\$37,705
			616	LABOR	150	655
						\$15,851
						\$15,851
						\$15,851
				OVERHEADS	406	\$2,450
					421	\$2,790
					422	\$8,102
					423	\$1,297
						\$14,639
						\$30,490
						\$68,195
						\$68,195



CA-IR-246  
DOCKET NO. 2006-0387  
ATTACHMENT D  
PAGE 1 OF 2

CA-IR-258  
DOCKET NO. 2006-0386  
HECO T-8  
ATTACHMENT 1  
PAGE 1 OF 2

**Standard Register Bill Forms  
Inter-company Billings 2007**

3/11/06

**YEAR 2007**

23	(estimated for 1/2 year in 06)
x2	
46	annual releases
x68	cartons per release (2,000 per carton)
3128	(total forms 3,128 * 2,000 = 6,256,000 forms annually)
\$36.93	(est. costs calculation is actual cost of 34.84, 3/06 x 6%=36.93)
<b>\$115,517</b>	<b>TOTAL FOR 2007</b>

COMPANY	% PORTION	AMOUNT
HECO	67.9%	78,436
HELCO	17.2%	19,869
MECO	14.9%	17,212
<b>Total</b>	<b>100%</b>	<b>115,517</b>

**Allocation Estimate to the 3 Companies**

Company	Customer Count 2005	
HECO	291,580	67.9%
HELCO	73,835	17.2%
MECO	63,901	14.9%
	<b>429,316</b>	<b>100%</b>

CA-IR-246  
DOCKET NO. 2006-0387  
ATTACHMENT D  
PAGE 2 OF 2

CA-IR-258  
DOCKET NO. 2006-0386  
HECO T-8  
ATTACHMENT I  
PAGE 2 OF 2

Review Transaction Record (HAWAIIAN ELECTRIC COMPANY, INC.)

File Edit Tools Help

☒ OK ☐ Revert ☐ ☐ Next File

Trans Id: 2006022818737610002777

Category: P Purchase Req Order Receipts

Status: 0 Posted

General Category Details

Work Order	: None
Project No.	: None
Equipment No.	: None
Purchase req.	: 123999/001 B01 8734993; V09059
Purchase Order	: V09059/008
Warehouse	: TD01 WARD AVE BASEYARD
Respons. Code	: 0000009005 RADFORD, CYNTHIA J
S/Tax Code	: S G.E. TAX Tax percentage: 4.50
Supplier	: 006134 THE STANDARD REGISTER COMPANY
Quantity Rec.	: U01 68.00 Net Price: 36.8000
U. of Purchase	: BX BOX

Unit Price

MSM903A

MAUI ELECTRIC COMPANY, LTD.  
2007 OPERATING BUDGET  
ACCOUNTING DEPARTMENT  
HECO ICBs - August 30 HECO Pillar Files

<u>Line No.</u>	<u>RA</u>	<u>Act</u>	<u>Loc</u>	<u>Proj</u>	<u>August</u>	<u>MECO Codeblock</u>	<u>Naruc</u>	<u>Budget May YTD</u>	<u>Actual May YTD</u>	<u>Variance May YTD</u>	<u>Variance Explanation</u>
1	PCA	614	MAU	NPCZZZZZ	\$ 19,114	MCR614MAUNENMCZZZZZ550	903	\$6,370.00	6,492.13	-\$122.13	
2	PCP	604	MAU	NPCZZZZZ	\$ 37,667	MCR604MAUNENMCZZZZZ550	903	\$12,464.00	13,541.00	-\$1,077.00	
3	PCP	614	MAU	NPCZZZZZ	\$ 252,723	MCR614MAUNENMCZZZZZ550	903	\$84,240.00	78,199.59	\$6,040.41	Please see variance explanation below.
4	PCP	616	MAU	NPCZZZZZ	\$ 30,459	MCR616MAUNENMCZZZZZ550	903	\$10,044.00	8,979.74	\$1,064.26	

VARIANCE EXPLANATION

An increase of 7.7% for First Class Postage and an increase of 6.48% for Presorted First Class Postage was budgeted from January 2007 to December 2007, however, the postal increases did not take place until mid May 2007.

CA-IR-247

**Ref: Response to CA-IR-148, Attachment B (Customer Service Labor Hours/Overtime).**

Please provide the following information in support of proposed labor hour quantities:

- a. Explain all reasons why RA=MCN is believed to require 10,440 straight time hours and 1,234 overtime hours in the test year, when all prior years have considerably lower labor requirements.
- b. Explain all reasons why RA=MCF is believed to require 14,616 straight time hours plus 184 overtime hours in the test year, when all prior years have considerably lower labor requirements.
- c. Explain all reasons why RA=MCR is believed to require 27,144 straight time hours plus 3,040 overtime hours in the test year, when all prior years have considerably lower labor requirements.
- d. Explain all reasons why RA=MCZ is believed to require 8,352 straight time hours plus 2,030 overtime hours in the test year, when all prior years have considerably lower labor requirements, indicating how the Company's proposed IRP normalization adjustment impacts the test year labor expenses and comparisons to prior years.
- e. Provide complete copies of all reports, analyses, comparative workload statistics and other information supportive of your responses to parts (a) through (d) of this information request.

**MECO Response:**

- a. The RA=MCN will require five (5) positions (10,440 straight time hours) and 1,234 overtime hours for the Commercial Services Division of the Customer Service Department. The responsibilities and work required of this Division were explained in MECO T-8 at pages 12-14 for the following four (4) positions: Supervisor of Commercial Services, and three (3) Commercial Account Managers. The fifth position is the Energy Efficiency Program Manager to implement and manage MECO's three (3) Commercial and Industrial ("C&I") Energy Efficiency Demand-Side Management ("DSM") programs. The overtime hours are forecasted for the extra time required by the Commercial Account Managers to manage projects relating to their key customers, and for the Energy Efficiency Program Manager to manage

the C&I DSM programs. These overtime hours do not result in additional costs because they are merit exempt employees.

The labor requirements for this Division are higher than in prior years primarily due to staff turnover in the Commercial Account Manager and Energy Efficiency Program Manager positions, which resulted in vacancies in the 2004 – 2006 timeframe, and the addition of the Supervisor of Commercial Services position, which was filled in November 2006.

- b. The RA=MCF will require seven (7) positions (14,616 straight time hours) and 184 overtime hours for the Field Services Division of the Customer Service Department. The responsibilities of this Division were explained in MECO T-7 at page 23 for the following positions: Supervisor, Field Services, and six (6) Field Service Representatives and Collectors. A Field Service Representative was added in January 2007 due to the increasing number of field transactions required for the growing number of customers, as explained in MECO T-7 at pages 7 and 8. This staff addition explains the higher straight time hours in the test year than in prior years. The overtime hours are forecasted for the Field Service Representatives to complete same day starts and reconnections, which are called in by customers near the end of the day. These overtime hours were estimated at slightly less than one hour per day per month, which is reasonable based on what was incurred on average in the past.
- c. The RA=MCR will require thirteen (13) positions (27,144 straight time hours) and 3,040 overtime hours for the Customer Accounts Division of the Customer Service Department. The responsibilities of this Division were explained in MECO T-7 at page 23 for the following positions: One (1) Customer Accounts Supervisor (merit

exempt employee), and twelve (12) customer service representatives (bargaining unit non-exempt employees). The reasons for the higher levels of straight time and overtime hours were included in MECO's response to CA-IR-148, part (d)(5).

Further, to address the staff turnover, MECO is using temporary services from an employment agency for a mail clerk and switchboard clerk to allow existing staff to provide coverage in the customer billing and call center sections of the Customer Accounts Services division. Hiring temporary services, which was not included in the test year estimate, is used in lieu of overtime because the coverage is needed during normal business hours. As non-labor expenses for temporary services were not included in the test year estimate, this additional cost will offset lower overtime expenses for non-exempt employees for the test year.

- d. The RA=MCZ will require four (4) positions (8,352 straight time hours) and 2,030 overtime hours for the Integrated Resource Planning ("IRP")/Customer Efficiency Programs ("CEP") Division of the Customer Service Department. The responsibilities of this division are to manage MECO's IRP process, which was described in detail in MECO T-8 at pages 23 to 24, and MECO's residential DSM programs. The positions included in this division are: Supervisor, IRP/CEP; Clerk Typist II; Residential Energy Efficiency Program Manager; and IRP Specialist. MECO's proposed normalization adjustment adds labor expenses estimated at \$100,000 to the test year as described in MECO T-8 at page 26. The labor hours budgeted for this position are part of the total straight time and overtime hours for MCZ reported in Attachment B of MECO's response to CA-IR-148.

The labor requirements for this Division are higher than in prior years primarily due

to staff turnover in the IRP Specialist, Energy Efficiency Program Manager and Clerk Typist III positions, which resulted in vacancies in the 2004 – 2006 timeframe. The overtime for this Division in the 2007 test year includes 1,300 hours for the IRP Supervisor and IRP Specialist to prepare and support rate case filings. Overtime hours for three (including the IRP Supervisor and IRP Specialist) of the four positions do not result in additional costs because they are merit exempt employees.

- e. See Attachment A for comparative staffing statistics, which were based on the hours reported in MECO-704, updated June 8, 2007, filed in MECO's response to CA-IR-248, Attachment B. Also see MECO's response to CA-IR-148, Attachment A.

**MAUI ELECTRIC COMPANY, LIMITED**

**2007 TEST YEAR**

**CUSTOMER SERVICE DEPARTMENT STAFFING COMPARISON**

**2001-2006 ANNUAL RECORDED & 2007 ANNUAL FORECAST**

			2001	2002	2003	2004	2005	2006	2007	5-Yr Avg
			Staff	Staff	Staff	Staff	Staff	Staff	Staff	Staff
Line	RA	RA Description	Count	Count	Count	Count	Count	Count	Count	Count
1	MCA	Administrative	1.0	1.0	1.0	2.0	2.0	2.0	3.0	1.6
2	MCF	Field Services	6.2	6.0	6.0	6.0	6.0	6.0	7.0	6.0
3	MCM	Meter Reading	6.8	6.8	7.0	6.9	8.0	8.1	8.0	7.4
4	MCN	Energy Services	5.0	4.2	3.0	2.8	2.6	3.5	5.0	3.2
5	MCR	Cust Acct Service	11.1	11.6	12.0	12.0	11.8	12.6	13.1	12.0
6	MCT	Molokai	4.0	3.5	3.0	3.0	3.0	3.0	3.0	3.1
7	MCZ	IRP	3.9	4.3	4.9	3.2	3.0	2.8	4.0	3.6
8	MC0	Total Dept	38.1	37.4	36.9	35.9	36.4	38.0	43.2	36.9

Source: MECO-704, updated June 8, 2007, filed as CA-IR-248, Docket No. 2006-0387, Attachment B, page 1.



CA-IR-248

**Ref: MECO-812; Response to CA-IR-153, Attachment A; MECO IRP-3 Filing in Docket No. 04-0077, pages 3-1 and 3-5 (IRP-3 Activities and Costs).**

According to the Company's IRP filing, "MECO recognized that the third planning cycle should build upon its current resource plans...and not start from the ground up." At page 3-5 a "General Workflow" diagram appears. Please provide the following information:

- a. Explain activities where work and costs were avoided by MECO in IRP-3 as a result of building upon current resource plans and not starting "from the ground up."
- b. Provide an estimate of labor hours by RA and non-labor expenses by RA that were incurred by MECO at each level of the "General Workflow" table for IRP-3 that has been completed, to-date.
- c. Explain all reasons why a 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A in the amount of \$59,940 for Labor would not be more representative of ongoing conditions than the \$100,000 used by MECO at MECO-812, line 5.
- d. Explain all reasons why a 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A in the amount of \$520,239 for Non-Labor would not be more representative of ongoing conditions than the \$696,000 used by MECO at MECO-812, line 5.
- e. Provide an update of all 2007 forecasted cost figures in MECO-WP-812, indicating 2007 year to-date actual and remaining 2007 forecasted costs by line item.

**MECO Response:**

Note: Only response to subpart e. and page 1 of Attachment A to this response revised.

- a. The Company started its third planning cycle with its existing plan (updated IRP-2 plan as filed in the April 2005 Evaluation Report, and utilized in the March 6, 2006 Adequacy of Supply Report) under which it operated, and acknowledged that not all available resources were going to be a good match given the attributes of each resource given the Company's relatively small system size and customer size. The Company then used a streamlined process for the identification and development of strawman and conceptual finalist plans, which occurred in the "Planning" phase of the "General Workflow" diagram. Along with input from its

Advisory Group, the Company came up with three strawman/conceptual finalist plans for the island of Maui and one each for the island of Lanai and Molokai to analyze in the integration phase of the process by considering resources to include or remove from the Company's existing resource plan (see Section 8.3.2 of MECO's IRP-3 filing in Docket No. 04-0077). This is in comparison to MECO's IRP-2 process in which nine conceptual finalist plans were analyzed in the integration phase resulting in 11 finalist plans to select a preferred plan. (See Section 8.3 of MECO's IRP-2000 filing in Docket No. 99-0004.)

- b. Labor hours by RA are not readily available, as requested, by each level of the "General Workflow" table. However, MECO's 2006 Recovery of 2006 IRP Planning Costs, filed on March 30, 2007, in Docket No. 05-0273, Attachment A, describes MECO's 2006 IRP expenditures by RA for labor and non-labor expenses.
- c. The 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A, in the amount of \$59,940 for Labor would not be more representative of ongoing conditions than the \$100,000 used by the Company because the 2004 and 2006 recorded amounts reflect partial staffing of an IRP Specialist due to staff turnover. A full-time IRP Specialist should be included each year to perform the work, and is represented by the \$100,000 estimated in the 2007 test year.
- d. The 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A, in the amount of \$520,239 for Non-Labor would not be more representative of ongoing conditions than the \$696,000 used

by the Company because the 2004 recorded amounts do not reflect the on-going nature of the IRP process. In the past, the process was cyclical where there was less activity in one year, with activity increasing in the years leading up to and following a report filing. However, with the process changing to one that is on-going with continuous updates, the level of expenses is expected to be closer to the 3-year average proposed by the Company.

- e. See revised Attachment A for an update of all 2007 forecasted cost figures in MECO-WP-812. Page 1 of Attachment A has been revised to include corrected information for June YTD 2007 (column L) and revisions for Remaining Months (column M).

## MAUI ELECTRIC COMPANY, LIMITED

ANNUAL, INCREMENTAL IRP ACTUALS AND BUDGET  
1998 - 2007 COST TYPE DETAIL

Line	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	1998	1999	2000	2001	2002	2003	2004	2005	2006	Budget 2006	July YTD 2006 + Fcst	June YTD 2007	Remaining Months	Budget 2007
1 Labor	4,689	36,185	45,806	34,056	47,183	49,393	17,528	51,786	33,374	134,538	65,113	27,543	29,558	57,101
2 Overhead	5,350	18,769	16,434	13,901	25,313	36,708	11,953	38,557	26,623	82,224	42,883	21,832	22,333	44,165
3 Total Labor	10,039	54,954	62,240	47,957	72,496	86,102	29,481	90,343	59,997	216,762	107,996	49,375	49,688	101,266
Non-Labor														
MATERIALS														
4 (201) Materials-Purchases	9,516	2,402	1,814	0	266	619	2,658	1,764	1,500	583	1,224	1021	-	859
FREIGHT, POSTAGE AND BULK MAIL														
5 (640) Freight, Postage & Bulk Mail									47	0		0	0	0
6 TRANSPORTATION	0	0	0	0	0	0	0	0	0	0		0	0	0
INFORMATION SYSTEM SERVICES														
7 (451) IS Expenses-Production	(120)	115	45	24	0	0	0	0	0	0		0	0	0
8 (462) IS Expenses-PC Software	1,626		0	0	0	0	0	0	0	500		0	0	0
CONTRACTS/SERVICES														
9 (501) Outside Services-General	243,171	193,125	34,608	12,892	1,748	24,204	28,183	314,388	110,468	181,000	124,783	25,909	29,929	56,000
10 (550) Intercompany Billings:											545,410		-	0
11 Planning & Engineering	332,460	244,993	172,438	91,116	28,032	35,287	39,871	0	5,178	12,212	85,000		-	0
12 Energy Services	138,895	49,394	34,064	31,939	50,089	57,080	61,518	2,782	2,181	17,134		3,751	-	3,751
13 Energy Projects								12,878	5,699	1,907		647	15,508	16,155
14 Corporate Communications	0	0	4,104	71	0	0	0	1,192	66	5,662		913	184	1,097
15 Engineering	0	26,050	7,539	0	0	0	0	7,963		0			12,921	12,921
16 Regulatory Affairs	681	1,463	16,048	11,974	2,483	3,108	9,240	4,893	2,432	8,613		4,015	3,083	7,098
17 Environmental	0	203	335	0	0	0	0	0	0	2,508			2,464	2,464
18 IRP	0	0	0	0	0	40,714	29,371	55,183	141,285	239,853		69,294	181,285	250,579
19 Technology	0	0	0	0	0	101	1,561	6,902	10,479	26,760		968	26,935	27,903
20 Education & Consumer Affairs	0	0	0	0	0	0	1,141	7,360	2,135	0		588	1,731	2,319
21 Forecast & Research	0	0	0	0	0	0	0	70,279	90,294	80,414		5,123	163,581	168,704
22 Power Supply Services	0	0	0	0	0	0	0	77,903	206,918	236,450		17,090	116,047	133,137
23 Customer Technology Applic	0	0	0	0	0	0	0	0	4,584	0			13,144	13,144
24 IT&S	0	0	0	0	0	0	0	0	0	0			-	0
25 Legal	0	0	0	866	0	0	0	0	0	0			-	0
26 Mgmt. Acctg. & Financial Svcs	0	0	0	0	93	0	0	0	0	0			-	0
27 Corp Admin Billable Overhead	0	25,969	2,646	(257)	0	0	0	0	0	0			-	0
28 (502) Outside Services-Legal	0	0	3,703	10,226	2,734	542	3,656	12,057	9,020	21,000		13,278	7,722	21,000
29 (503) Outside Services - Temp Hire	17,562	663	0	0	0	0	0	0	0	0		0	-	0
30 (520) Mainland Travel	0	731	1,880	278	1,425	0	2,029	48	0	2,500	(30)	0	2,500	2,500
31 (521) Meals & Entertainment	931	1,023	412	2,792	370	570	1,105	5,294	5,121	7,500	4,412	344	906	1,250
32 (522) Interisland Travel	8,234	3,433	3,211	0	3,984	3,864	5,493	9,927	6,850	10,000	7,040	1,381	6,619	8,000
33 Total Non-Labor	752,956	549,564	282,846	161,921	91,226	166,089	185,826	590,813	604,257	854,596	767,839	144,323	584,559	728,882
34 Total	762,995	604,518	345,086	209,879	163,721	252,191	215,307	681,156	664,254	1,071,358	875,835	193,698	634,247	830,148

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DOCKET NO. 2006-0387  
ATTACHMENT A  
PAGE 1 OF 2  
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MAUI ELECTRIC COMPANY, LIMITED

ANNUAL, INCREMENTAL IRP ACTUALS AND BUDGET  
1998 - 2007 COST TYPE DETAIL

Line	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	1998	1999	2000	2001	2002	2003	2004	2005	2006	Budget 2006	2006 July YTD + Fcst	June YTD 2007	Remaining Months	Budget 2007
35	3 year average for TY + 2 prior years													795,713
36	Labor													99,869
37	Non labor													695,845

SOURCE:

1998 Docket No. 97-0358, HECO, HELCO, MECO Recovery of 1998 IRP Planning Costs, filed November 10, 1999, Attachment C, page 3  
 1999 Docket No. 98-0339 HECO, HELCO, MECO Recovery of 1999 IRP Planning Costs, filed March 31, 2000, Attachment C, page 4  
 2000 Docket No. 99-0338 HECO, HELCO, MECO Recovery of 2000 IRP Planning Costs, filed March 29, 2001, Attachment C, page 2  
 2001 Docket No. 00-0360 HECO, MECO Recovery of 2001 IRP Planning Costs, filed March 28, 2002, Attachment B, page 2 (less \$257 per transmittal letter dated January 27, 2003)  
 2002 Docket No. 01-0409 HECO, MECO Recovery of 2002 IRP Planning Costs, filed March 31, 2003, Attachment B, page 2  
 2003 Docket No. 02-0359 HECO, MECO Recovery of 2003 IRP Planning Costs, filed March 31, 2004, Attachment B, page 5 (need to verify date of filing and final amount for cost recovery)  
 2004 Docket No. 03-0276 HECO, MECO Recovery of 2004 IRP Planning Costs, filed March 31, 2005, Attachment B, page 2 (need to verify date of filing and final amount for cost recovery)  
 2005 Docket No. 04-0295 HECO, MECO Recovery of 2005 IRP Planning Costs, filed March 31, 2006, Attachment B, page 2  
 2006 Docket No. 05-0273 Applicatin For Approval of Recovery of 2006 IRP Planning Costs Through The Company's IRP Cost Recovery Provision, filed October 28, 2005, Attachment A, page 1  
 2007 Docket No. 06-0xxx Applicatin For Approval of Recovery of 2007 IRP Planning Costs Through The Company's IRP Cost Recovery Provision, filed October xx, 2006, Attachment A, page 1  
 (need to verify cost, docket, date of filing)

CA-IR-248  
 DOCKET NO. 2006-0387  
 ATTACHMENT A  
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 MECO-WP-812  
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CA-IR-248

**Ref: MECO-812; Response to CA-IR-153, Attachment A; MECO IRP-3 Filing in Docket No. 04-0077, pages 3-1 and 3-5 (IRP-3 Activities and Costs).**

According to the Company's IRP filing, "MECO recognized that the third planning cycle should build upon its current resource plans...and not start from the ground up." At page 3-5 a "General Workflow" diagram appears. Please provide the following information:

- a. Explain activities where work and costs were avoided by MECO in IRP-3 as a result of building upon current resource plans and not starting "from the ground up."
- b. Provide an estimate of labor hours by RA and non-labor expenses by RA that were incurred by MECO at each level of the "General Workflow" table for IRP-3 that has been completed, to-date.
- c. Explain all reasons why a 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A in the amount of \$59,940 for Labor would not be more representative of ongoing conditions than the \$100,000 used by MECO at MECO-812, line 5.
- d. Explain all reasons why a 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A in the amount of \$520,239 for Non-Labor would not be more representative of ongoing conditions than the \$696,000 used by MECO at MECO-812, line 5.
- e. Provide an update of all 2007 forecasted cost figures in MECO-WP-812, indicating 2007 year to-date actual and remaining 2007 forecasted costs by line item.

**MECO Response:**

- a. The Company started its third planning cycle with its existing plan (updated IRP-2 plan as filed in the April 2005 Evaluation Report, and utilized in the March 6, 2006 Adequacy of Supply Report) under which it operated, and acknowledged that not all available resources were going to be a good match given the attributes of each resource given the Company's relatively small system size and customer size. The Company then used a streamlined process for the identification and development of strawman and conceptual finalist plans, which occurred in the "Planning" phase of the "General Workflow" diagram. Along with input from its Advisory Group, the Company came up with three strawman/conceptual finalist

plans for the island of Maui and one each for the island of Lanai and Molokai to analyze in the integration phase of the process by considering resources to include or remove from the Company's existing resource plan (see Section 8.3.2 of MECO's IRP-3 filing in Docket No. 04-0077). This is in comparison to MECO's IRP-2 process in which nine conceptual finalist plans were analyzed in the integration phase resulting in 11 finalist plans to select a preferred plan. (See Section 8.3 of MECO's IRP-2000 filing in Docket No. 99-0004.)

- b. Labor hours by RA are not readily available, as requested, by each level of the "General Workflow" table. However, MECO's 2006 Recovery of 2006 IRP Planning Costs, filed on March 30, 2007, in Docket No. 05-0273, Attachment A, describes MECO's 2006 IRP expenditures by RA for labor and non-labor expenses.
- c. The 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A, in the amount of \$59,940 for Labor would not be more representative of ongoing conditions than the \$100,000 used by the Company because the 2004 and 2006 recorded amounts reflect partial staffing of an IRP Specialist due to staff turnover. A full-time IRP Specialist should be included each year to perform the work, and is represented by the \$100,000 estimated in the 2007 test year.
- d. The 3-year average of the actual 2004, 2005 and 2006 incremental IRP costs, as set forth in CA-IR-153, Attachment A, in the amount of \$520,239 for Non-Labor would not be more representative of ongoing conditions than the \$696,000 used by the Company because the 2004 recorded amounts do not reflect the on-going

nature of the IRP process. In the past, the process was cyclical where there was less activity in one year, with activity increasing in the years leading up to and following a report filing. However, with the process changing to one that is ongoing with continuous updates, the level of expenses is expected to be closer to the 3-year average proposed by the Company.

- e. See Attachment A for an update of all 2007 forecasted cost figures in MECO-WP-812.



## MAUI ELECTRIC COMPANY, LIMITED

ANNUAL, INCREMENTAL IRP ACTUALS AND BUDGET  
1998 - 2007 COST TYPE DETAIL

Line		A	B	C	D	Recorded				J	K	L	M	N	
		1998	1999	2000	2001	2002	2003	2004	2005	2006	Budget 2006	2006 July YTD + Fcst	June YTD 2007	Remaining Months	Budget 2007
1	Labor	4,689	36,185	45,806	34,056	47,183	49,393	17,528	51,786	33,374	134,538	65,113	23,956	33,145	57,101
2	Overhead	5,350	18,769	16,434	13,901	25,313	36,708	11,953	38,557	26,623	82,224	42,883	19,047	25,118	44,165
3	Total Labor	10,039	54,954	62,240	47,957	72,496	86,102	29,481	90,343	59,997	216,762	107,996	43,003	58,263	101,266
Non-Labor															
MATERIALS															
4	(01) Materials-Purchases	9,516	2,402	1,814	0	266	619	2,658	1,764	1,500	583	1,224	859	0	859
FREIGHT, POSTAGE AND BULK MAIL															
5	(00) Freight, Postage & Bulk Mail									47	0		0	0	0
6	TRANSPORTATION	0	0	0	0	0	0	0	0	0	0		0	0	0
INFORMATION SYSTEM SERVICES															
7	(01) IS Expenses-Production	(120)	115	45	24	0	0	0	0	0	0		0	0	0
8	(02) IS Expenses-PC Software	1,626		0	0	0	0	0	0	0	500		0	0	0
CONTRACTS/SERVICES															
9	(01) Outside Services-General	243,171	193,125	34,608	12,892	1,748	1,204	28,183	314,388	110,468	181,000	124,783	25,516	30,484	56,000
10	(00) Intercompany Billings:											545,410		0	0
11	Planning & Engineering	332,460	244,993	172,438	91,116	28,032	35,287	39,871	0	5,178	12,212	85,000		0	0
12	Energy Services	138,895	49,394	34,064	31,939	50,089	57,080	61,518	2,782	2,181	17,134		3,751	0	3,751
13	Energy Projects								12,878	5,699	1,907		647	15508	16,155
14	Corporate Communications	0	0	4,104	71	0	0	0	1,192	66	5,662		913	184	1,097
15	Engineering	0	26,050	7,539	0	0	0	0	7,963		0			12921	12,921
16	Regulatory Affairs	681	1,463	16,048	11,974	2,483	3,108	9,240	1,893	2,432	8,613		4,015	3083	7,098
17	Environmental	0	203	335	0	0	0	0	0	0	2,508			2464	2,464
18	IRP	0	0	0	0	0	40,714	29,371	55,183	141,285	239,853		69,294	181285	250,579
19	Technology	0	0	0	0	0	101	1,561	6,902	10,479	26,760		968	26935	27,903
20	Education & Consumer Affairs	0	0	0	0	0	0	1,141	7,360	2,006	0		588	1731	2,319
21	Forecast & Research	0	0	0	0	0	0	0	70,279	90,294	80,414		5,123	163581	168,704
22	Power Supply Services	0	0	0	0	0	0	0	77,903	206,918	336,450		17,090	116047	133,137
23	Customer Technology Applic	0	0	0	0	0	0	0	0	4,584	0			13144	13,144
24	IT&S	0	0	0	0	0	0	0	0	0	0			0	0
25	Legal	0	0	0	866	0	0	0	0	0	0			0	0
26	Mgmt. Acctg. & Financial Svcs	0	0	0	0	93	0	0	0	0	0			0	0
27	Corp Admin Billable Overhead	0	25,969	2,646	(257)	0	0	0	0	0	0			0	0
28	(02) Outside Services-Legal	0	0	3,703	10,226	2,734	542	3,656	12,057	9,020	21,000		12,762	8,238	21,000
29	(03) Outside Services - Temp Hire	17,562	663	0	0	0	0	0	0	0	0		0	0	0
30	(00) Mainland Travel	0	731	1,880	278	1,425	0	2,029	48	0	2,500	(30)		2,500	2,500
31	(01) Meals & Entertainment	931	1,023	412	2,792	370	570	1,105	5,294	5,121	7,500	4,412	47	1,203	1,250
32	(02) Interisland Travel	8,234	3,433	3,211	0	3,984	3,864	5,493	9,927	6,850	10,000	7,040	1,003	5,997	8,000
33	Total Non-Labor	752,956	549,564	282,846	161,921	91,226	166,089	185,826	590,813	604,257	854,596	767,839	142,577	586,305	728,882
34	Total	762,995	604,518	345,086	209,879	163,721	252,191	215,307	681,156	664,254	1,071,358	875,835	185,580	644,568	830,148

MECO-WP-812  
DOCKET NO. 2006-0387  
PAGE 1 OF 2  
UPDATED JULY 10, 2007  
CA-IR-248  
DOCKET NO. 2006-0387  
ATTACHMENT A  
PAGE 1 OF 2

MAUI ELECTRIC COMPANY, LIMITED

ANNUAL, INCREMENTAL IRP ACTUALS AND BUDGET  
1998 - 2007 COST TYPE DETAIL

Line	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	1998	1999	2000	2001	2002	2003	2004	2005	2006	Budget 2006	2006 July YTD + Fcst	June YTD 2007	Remaining Months	Budget 2007
35	3 year average for TY + 2 prior years													795,713
36	Labor													99,869
37	Non-labor													695,845

SOURCE:

1998 Docket No. 97-0358, HECO, HELCO, MECO Recovery of 1998 IRP Planning Costs, filed November 10, 1999, Attachment C, page 3  
 1999 Docket No. 98-0339 HECO, HELCO, MECO Recovery of 1999 IRP Planning Costs, filed March 31, 2000, Attachment C, page 4  
 2000 Docket No. 99-0338 HECO, HELCO, MECO Recovery of 2000 IRP Planning Costs, filed March 29, 2001, Attachment C, page 2  
 2001 Docket No. 00-0360 HECO, MECO Recovery of 2001 IRP Planning Costs, filed March 28, 2002, Attachment B, page 2 (less \$257 per transmittal letter dated January 27, 2003)  
 2002 Docket No. 01-0409 HECO, MECO Recovery of 2002 IRP Planning Costs, filed March 31, 2003, Attachment B, page 2  
 2003 Docket No. 02-0359 HECO, MECO Recovery of 2003 IRP Planning Costs, filed March 31, 2004, Attachment B, page 5 (need to verify date of filing and final amount for cost recovery)  
 2004 Docket No. 03-0276 HECO, MECO Recovery of 2004 IRP Planning Costs, filed March 31, 2005, Attachment B, page 2 (need to verify date of filing and final amount for cost recovery)  
 2005 Docket No. 04-0295 HECO, MECO Recovery of 2005 IRP Planning Costs, filed March 31, 2006, Attachment B, page 2  
 2006 Docket No. 05-0273 Application For Approval of Recovery of 2006 IRP Planning Costs Through The Company's IRP Cost Recovery Provision, filed October 28, 2005, Attachment A, page 1  
 2007 Docket No. 06-0xxx Application For Approval of Recovery of 2007 IRP Planning Costs Through The Company's IRP Cost Recovery Provision, filed October xx, 2006, Attachment A, page 1  
 (need to verify cost, docket, date of filing)

CA-IR-249

**Ref: Response to CA-IR-149 (Reclassification of Incremental Positions).**

Please provide the following:

- a. Confirm that the "three positions" referenced on page 3 of your response have historically been classified as "incremental positions" for which labor costs have been recovered through the surcharge mechanism under the HECO Companies' existing cost recovery mechanism.
- b. If anything other than an unqualified confirmation is provided in your response to part (a), please explain how the three positions were treated historically in terms of cost recovery through the surcharge versus base rates.
- c. If, in response to the HECO Companies' Motion for Clarification and/or Partial Reconsideration of D&O No. 23258, the Commission clarified that "labor costs was intended to refer to 'base labor,' consistent with the HECO Companies' existing cost recovery mechanism" as stated at page 3 of your response, upon what authority does MECO now propose to reclassify labor costs historically treated as "incremental" under the "existing" cost recovery mechanism to now be "base labor"?

**MECO Response:**

- a. Yes. The "three positions" referenced on page 3 of MECO's response to CA-IR-149 have historically been classified as "incremental positions" for which labor costs have been recovered through the surcharge mechanism.
- b. Not applicable.
- c. The proposed classification of labor costs associated with these three regular MECO employees as base labor is consistent with the treatment by the Hawaiian Electric Company, Inc. ("HECO") Energy Services Department of DSM regular HECO employee labor costs as base labor in the HECO 2007 test year rate case (see the response to CA-IR-263 in Docket No. 2006-0386). In that proceeding, the Energy Services Department is also proposing to include two regular employee DSM positions in base rates to be consistent with the other regular employee DSM positions, all of which are already in base rates.

MECO will also address the inclusion of the three regular employee DSM positions into base rates in its June 2007 Update for T-8 which it will file shortly.

Even if certain DSM programs are transitioned to a non-utility, third-party administrator in 2009, MECO anticipates that the three employees will be engaged in load management programs, which the Company is planning to file proposals for later this year, and other work activities in the Customer Service Department.

CA-IR-250

**Ref: Responses to CA-IR-155, Attachment A; CA-IR-154, Attachment A (Actual versus Proposed TY Expenses).**

According to Attachment A, actual 2006 and YTD 2007 Account 910 Non-labor expenses are significantly below the projected test year expense level of \$298,000 (exclusive of DSM/IRP).

Please provide the following:

- a. Explain the general reasons for higher anticipated spending in 2007, relative to actual 2006 and YTD 2007 levels, indicating specific forecasted expenditure items for 2007 that have not been incurred.
- b. For each of the following test year projected expense elements, please explain present spending plans for the balance of 2007 and provide copies of documents supporting commitments to undertake the projected activities at test year spending levels:
  1. MCA Act 110 EE550 \$47,531
  2. MCN Act 112 EE422 \$73,489
  3. MCN Act 112 EE501 \$21,000
  4. MCN Act 112 EE520 \$10,000
  5. MSA Act 100 EE550 \$29,971
  6. MSC Act 750 EE201 \$38,100
- c. Explain any changes in specific spending plans for 2007 and/or any reasons why test year expenses should not be adjusted to reflect historical and ongoing expense levels.

**MECO Response:**

- a. The higher anticipated spending in 2007 for non-labor expenses in Account No. 910 is due to the staffing, technical support and training that is needed to operate as our business grows (tied to growth in customers). The specific forecasted expenditure items for 2007 that have not been incurred are addressed in the response to part (b) of this information request.
- b. The present spending plans for the balance of 2007 for the following test year projected expense elements are:
  1. MCA Act 110 EE 550 \$47,531

This expense is forecast for technical support from Hawaiian Electric Company, Inc. ("HECO") to assist with providing information concerning

various types of potential electrotechnology projects. The Company expects to be billed for these expenses later in the year. Therefore, the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels.

2. MCN      Act 112      EE 422      \$73,489

This expense is for employee benefits tied to the addition of the Commercial Services Supervisor in 2006, and the full staffing of Commercial Account Manager position as discussed in MECO T-8. The Company believes that the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels because the level of spending is expected to be higher with the current full-staffing in the Commercial Services Division of the Customer Service Department.

3. MCN      Act 112      EE 501      \$21,000

The expenses estimated for the test year are related to the PCEA/Expo, which MECO, HECO and HELCO are co-hosting. The event in 2007 is planned for September, and the registration, co-hosting and other expenses will not be recorded until later in the year. The Company believes that the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels because the level of spending is expected to be close to forecast at year-end. See Attachments A and B for details about the 2007 event.

4. MCN      Act 112      EE 520      \$10,000

The expenses estimated for the test year are related to the mainland travel for

the Commercial Services Division. For 2007, the Company plans to spend approximately \$9,000 (EE 501, 520 521) to send three (3) Commercial Account Managers to Honolulu for a Certified Energy Manager ("CEM") training and certification course in November, and to spend approximately \$3,500 (EE 501, 520, 521) to send the Commercial Services Supervisor to the 20<sup>th</sup> Annual ESource Forum to be held on September 25-28, 2007 in Boulder, Colorado. The Company believes that the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels because the level of spending is expected to be close to forecast at year-end. See Attachment C for the documents supporting the CEM training and certification commitment, and Attachment D for the documents supporting the ESource Forum commitment.

5. MSA      Act 100      EE 550      \$29,971

The expenses estimated for the test year are related to intercompany billings from HECO for market research. The expenses include administration of the Company's customer satisfaction surveys and other marketing studies by the HECO Research and Evaluation staff. The Company's Residential Customer Survey is conducted during the second and third quarters of the year, therefore, HECO's intercompany billings to the Company will increase substantially when these surveys are completed. The Company believes that the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels because the level of spending is expected to be close to forecast at year-end.

6. MSC      Act 750      EE 201      \$38,100

The expenses estimated for the test year are related to material purchases for our Customer Relations programs. A substantial amount of this expense item was incurred in the second quarter and additional expenses are anticipated in the third quarter of the test year in preparation for the Company's annual community event. The Company also does outreach in the community by participating in other events in the County of Maui such as informing the Company's customers about energy conservation and electrical safety.

Several of these events will take place in the latter part of this year such as the Maui County Fair, Kids' Days, Senior Citizens' Fair, and Speakers' Bureau presentations. The Company believes that the test year estimate should not be adjusted at this time to reflect historical and ongoing expense levels because the level of spending is expected to be close to forecast at year-end.

- c. See the response to part (b) above for reasons why the test year expenses should not be adjusted to reflect historical and ongoing expense levels.





Hawaiian Electric Company, Inc.  
P.O. Box 2750, CP10-SN • Honolulu, Hawaii 96840-0001

**2007 PACIFIC COAST ELECTRICAL ASSOCIATION  
HAWAII CONFERENCE & EXPO**  
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SEPTEMBER 6 - 8, 2007

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IS JULY 31  
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**2007 PACIFIC COAST ELECTRICAL ASSOCIATION  
HAWAII CONFERENCE & EXPO**  
GRAND WAILEA RESORT HOTEL & SPA, MAUI  
SEPTEMBER 6 - 8, 2007



Hosted by:  Maui Electric Company, Ltd.  
Hawaiian Electric Light Company, Inc.  
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**2007 PACIFIC COAST  
ELECTRICAL ASSOCIATION  
HAWAII CONFERENCE & EXPO**  
GRAND WAILEA RESORT HOTEL & SPA, MAUI  
SEPTEMBER 6 - 8, 2007



*"Today's Innovation...  
...Tomorrow's Independence"*



The 2007 Pacific Coast Electrical Association (PCEA) Hawaii Conference & Expo will be held on September 6-8 at the Grand Wailea Resort Hotel & Spa on Maui, Hawaii.

This year's PCEA Hawaii Conference takes place in a climate ripe with opportunity for implementing energy efficiency projects, improving facility performance, and looking at renewable and sustainable initiatives. With over 20 workshops and 40 exhibitors, attendees are sure to come away with valuable knowledge and insight from prominent leaders in the industry. The conference also provides an excellent opportunity for attendees to network, exchange ideas, and discuss projects among peers.

#### WHAT IS THE PCEA HAWAII CONFERENCE?

The PCEA Hawaii Conference originated over 30 years ago with the purpose of discussing and bringing to the forefront current energy and technical issues that could have an impact on electric utility users. The conference convenes biennially and rotates between sites on Maui and Hawaii.

#### WHO SHOULD ATTEND?

The PCEA workshops and sessions will interest a wide range of key decision makers, including:

- Commercial & Government Facility and Energy Managers
- Executives
- Design Consultants
- Trade Allies
- Project Managers
- Building Administrators
- Property Managers
- Electrical and Mechanical Engineers
- Or others involved in the decision making of how energy is used at a facility

#### Conference Schedule (Subject to change)

##### Thursday, September 6

9:00 AM - 1:00 PM Maui Ocean Center - Behind the Scenes Tour\*  
12:00 PM Registration Opens  
1:30 PM - 4:00 PM Workshops  
4:00 PM - 7:30 PM Welcome Reception & Exhibitor Area Opens

##### Friday, September 7

7:00 AM - 4:00 PM Exhibitor Area Open  
8:00 AM - 10:00 AM Breakfast and General Session  
10:30 AM - 4:30 PM Workshops  
12:00 PM - 1:00 PM Lunch  
6:00 PM - 9:00 PM Dinner and An Evening Under the Stars with Hapa\*\*

##### Saturday, September 8

7:30 AM - 9:00 AM Breakfast and Guest Speaker  
9:00 AM - 12:00 PM Workshops  
12:00 PM Conference Ends  
12:00 PM - 5:30 PM Golf Tournament\* and Reception at the clubhouse\*\*

\* Optional Activities at additional cost.

\*\* Guest tickets can be purchased for an additional fee.

## WORKSHOP SESSIONS

### ENERGY EFFICIENCY

Lighting Recipes with Halogen & Ceramic Metal Halide, Accent Lamps, CFLs, LEDs and Fiber Optics  
Sam Walsky, Principal, Lighting Wizards

"Deal or No Deal" on Myths of Lighting  
Michael Smith, Lighting Ballast Manager, GE Consumer & Industrial

Electronic Ballast: Moving from Fluorescent to HID  
Michael Smith, Lighting Ballast Manager, GE Consumer & Industrial

How Macy's Reduced Its Energy Usage by 40%  
Carl Burns, Corporate Energy Manager, Macy's

Getting to 50  
Maurice, Technical Director, New Buildings Institute

The Business Case for Energy Efficiency: Case Studies of Hotels in Hawaii  
John Lumborg, Senior Director of Energy, Sunwood Hotels & Resorts  
Miles Kubo, President, Energy Industries

### RENEWABLE & SUSTAINABLE INITIATIVES

Architectural Wind and Other Innovative Energy Solutions  
Jeff Wright, Director, Aerodynamix, Inc.

Benefits of 100,000 Tons of Reduced Air Conditioning  
David Bazzano, Associate Development Director, Honolulu Seawater Air Conditioning, LLC

Climate Protection Pays - A Case Study of Sonoma County's Climate Protection Plan  
Tim Holmes, Principal, Kenwood Energy

Sustainable Development on Maui & Building Insights: Realizing Zero Impacts  
Edward Cowling, President, Edward Cowling, Inc.

Green Building Services  
Tom Lumborg, Principal, Innovative Energy Solutions

### FACILITIES & PLANT ENGINEERING

An Overview on Commissioning  
Jay Santos, Principal, Facility Dynamics

Automatic Fault Diagnostics from DDC Data  
Jay Santos, Principal, Facility Dynamics

Cooling Tower Overseeing and Operating  
David Wyle, Principal, ASW Engineering

Generator Basics and Preventive Maintenance  
Clifford Yuen, Engine Sales Manager, Hawthorne Pacific

Emerging Power Quality Standards and How They Will Improve Process and Facility Performance  
David Dorr, Director, EPR Solutions

## ACTIVITIES

### Maui Ocean Center - Behind the Scenes Tour (Optional)

Space is limited  
Cost: \$60 (includes lunch and transportation)  
Thursday, September 6  
9:00 AM - 1:00 PM

The Maui Ocean Center is the only aquarium in the world dedicated to preserving and sharing the beauty and wonder of Hawaii's indigenous and endemic marine life. This three-acre marine park is the largest tropical reef aquarium in the Western Hemisphere!

The Center's goal is to foster a better understanding and appreciation of Hawaii's marine environment. The hope is to create a lifelong bond between people and the most precious resource. In addition to the many exhibits and presentations, you'll also get a unique behind the scenes tour depicting the aquatic engineering used to sustain the environmentally sensitive aquarium and marine life ecosystems.

### An Evening Under the Stars with HAWAIIAN

Cost included with Conference Registration  
Guest tickets may be purchased for an additional cost of \$140  
Friday, September 7 6:00 PM - 9:00 PM

Enjoy a scrumptious dinner followed by the captivating music of HAWAIIAN. Often encapsulated as the "Sound of Maui," HAWAIIAN music is a place that many people at different times have referred to as "heavenly". The overriding quality of their music is one of beauty and serenity found in the majestic tones of the olé (chant), mele (song), the elegant movements of the sacred dance known as hula, and the exhilarating innovative sounds of virtuoso slack key guitar. HAWAIIAN's self entitled debut CD released in 1993, swept the 1994 Na Hoku Hanohano Awards (Hawaii's equivalent of the Grammy's), becoming the biggest selling CD by a group or duo in the history of recorded Hawaiian music. The group's ground breaking music has established them as the most recognized name in Hawaiian music internationally since their debut release, with sold-out shows from Tokyo to New York.

Written by Barry Rivers, President, Maui Film Festival June, 2003

### NEW TECHNOLOGIES

Ultraviolet Water Treatment  
Fundamentals and Applications  
Eric Peterson, Director, Aquafine Corporation

Wireless Advanced Metering  
Carl Rhodes, Principal, Adams Power  
Earl Hume, Manager, Hawaiian Electric Co., Inc.

More Workshops To Come...  
Subject to change.

### GENERAL SESSION Keynote Panel

**BIOFUELS: HOME-GROWN ENERGY FOR HAWAII'S ENERGY INDEPENDENCE**  
Learn how biofuels could impact Hawaii through a discussion among three leading experts and pioneers in the fast developing industry. The panel includes representation from the different sectors that will be involved in the local biofuel industry: agriculture, processing, and new technologies that could revolutionize the biofuel process.

**Panelists:**  
G. Stephen Hodelay, President, Agribusiness, Hawaiian Commercial & Sugar Company  
Bob Shiner, Chief Technology Officer, Clearfield Technology  
Linda Maltz, President, BioEarth Biotech

For up-to-date information on conference schedule, workshops, exhibitors, and sponsors visit: <http://pcea.hawaii.com>



All PCEA Hawaii Conference registration and hotel accommodations at the Grand Wailea Resort Hotel & Spa should be mailed or faxed to:  
Destination Hawaii/MC&A  
PCEA Registration  
615 Pilihi St., 10th Floor  
Honolulu, Hawaii 96814  
Phone: (808) 589-5500  
FAX: (808) 589-5501  
Email: [kayla@destinationhawaii.com](mailto:kayla@destinationhawaii.com)  
Make checks payable to: MC&A

### CONFERENCE REGISTRATION

Early Bird Registration: \$285  
(Deadline is July 31)  
Registration after July 31: \$385  
The conference registration fee includes admission to the General Session and all workshops. Also included is an evening reception on Thursday, all meals on Friday (including the show and dinner), and breakfast on Saturday.

### Optional activities include:

- Maui Ocean Center - Behind the Scenes Tour
- Guest admission to An Evening Under the Stars with HAWAIIAN
- Golf tournament and/or admission to the Reception for guests at the clubhouse.
- Admission to these events can be purchased in advance or on-site through Destination Hawaii/MC&A, based on space availability.

### HOTEL ACCOMMODATIONS AT THE GRAND WAILEA RESORT HOTEL & SPA

Conference room reservations at the Grand Wailea Resort are being handled directly through Destination Hawaii/MC&A. A special PCEA Hawaii Conference Hotel rate of \$225 (excluding applicable taxes, resort fee, and other hotel charges) is being offered through August 6, 2007. A two-night room deposit is required 30 days prior to arrival to guarantee the room reservation. The conference hotel rate may be extended three days prior to and three days following the conference. Reservations made after August 6, 2007, will be priced and based on availability.

### Hotel cancellation policy

A written notice of cancellation must be received by Destination Hawaii/MC&A by August 3, 2007 to receive a full refund for hotel room reservations. Any cancellation after August 3, 2007 may result in a forfeiture of the total room charge.

Any conference or hotel cancellation or change must be made in writing to Destination Hawaii/MC&A and will be subject to a \$10 Destination Hawaii/MC&A processing fee for each person and each change.

### Golf Tournament at the Maui Prince Hotel - Makena South Course (Optional)

Cost \$150  
Saturday, September 8 12:00 PM - 5:30 PM

What better way to end the PCEA Conference than to join us at the 2007 PCEA Golf Tournament! This year's tournament may prove to be the most fun and challenging ever, as we are setting the stage at the world renowned Maui Prince Hotel - Makena South Course designed by Robert Trent Jones, Jr. With its natural rolling fairways, undulating greens, and breathtaking views of the ocean and mountains, the South Course is a favorite among many Maui golfers. Participants will have the opportunity of winning \$10,000 for shooting a "hole-in-one" at the par three, 130 yard, 13th hole. Price includes course fee, cart fee, box lunch, and reception to follow at the clubhouse. For those interested in attending only the golf reception, guest tickets may be purchased for \$50 each.



## 2007 PCEA Hawaii Conference & Expo Registration Form

SEPTEMBER 6 - 8, 2007

<b>CONFERENCE REGISTRATION:</b> (Attach names of all registrants on guests, incl. contact and mailing info.)	
Name: _____	Email: _____
Company: _____	Title: _____
Address: _____	
Phone: _____ Fax: _____	Check All Applicable: <input type="checkbox"/> Attendee <input type="checkbox"/> Exhibitor <input type="checkbox"/> Speaker
<input type="checkbox"/> <b>Early Bird Conference Registration: \$285</b> <i>Early Bird must be received by Destination Hawaii/ MC and A no later than July 31, 2007.</i>	Guest Name(s) _____ Number of Registrants: _____ x \$285 = \$ _____ (A)
<input type="checkbox"/> <b>Conference Registration: \$385</b> <i>Registering after July 31, 2007.</i>	Number of Registrants: _____ x \$385 = \$ _____ (B)

<b>HOTEL ACCOMMODATIONS:</b>	
<input type="checkbox"/> Yes! Please reserve a room for me. Choose one: <input type="checkbox"/> Single or <input type="checkbox"/> Double Occupancy	
Check-In Date: _____ Check-Out Date: _____	
Bedding: <input type="checkbox"/> King or <input type="checkbox"/> Doubles (subject to availability)	No. of Adults: _____ No. of Children: _____
Total Amount = No. of Nights: _____ x \$264.23 = \$ _____ (C)	
The total room cost of \$264.23/nt = \$225/nt Room Rate + \$25.69/nt for room tax + \$10.42/nt for resort fee/tax + \$3.12/nt for maid fee/ tax. An additional - one time portage fee of \$10.42 per person is not included in above prices (ITEM D).	
Number of People: _____ x \$10.42 = \$ _____ (D)	
A two-night room deposit is required 30 days prior to arrival to guarantee the room reservation. A written notice of cancellation must be received by Destination Hawaii/ MC and A by August 3, 2007 in order to receive a full refund for hotel room. Any cancellation after August 3rd will result in a forfeiture of the total room charge.	
The special \$225 Conference Resort Room Rate is guaranteed until August 6, 2007. These rates will be offered, based on space and rate availability, to attendees 3 days prior and 3 days after actual conference dates. Room reservations made after August 6, 2007 will be priced and based on hotel's availability.	
There is a \$50 per person/per night charge (plus taxes) for more than 2 persons in any room, with a maximum of 4 persons per room. No charge for children 17 years of age and younger staying in the same room with parents utilizing existing bedding.	
All Rooms are Non-Smoking and Run-of-House Rooms. Check-In Time is after 3:00 PM. Check-Out Time is 12:00 PM.	

<b>OPTIONAL ACTIVITIES:</b>	
1. Maui Ocean Center - Behind the Scenes Tour - Thurs., Sep. 6 <sup>th</sup> @ 9:00 AM	
<input type="checkbox"/> I will attend the tour.	# of Participants: _____ x \$60 = \$ _____ (E)
*Space is limited so sign up early (includes lunch and transportation).	
2. An Evening Under the Stars with HAPA - Fri., Sep. 7 <sup>th</sup> @ 6:00 PM	
Your registration already includes your admission to this event. Additional guests are invited at \$140 per person.	
<input type="checkbox"/> Guest Name(s) _____	# of Additional Guests: _____ x \$140 = \$ _____ (F)
3. Golf Tournament & Reception at the Maui Prince Hotel - Makena South Course - Sat., Sep. 8 <sup>th</sup> @ 12:00 PM	
<input type="checkbox"/> I will golf (includes lunch).	Handicap: _____ # of Golfers: _____ x \$150 = \$ _____ (G)
Guest Name/Handicap: 1) _____ 2) _____ 3) _____	
Golf fee includes reception to follow at the Clubhouse. Additional guests are invited at \$50 per person.	
<input type="checkbox"/> Guest Name(s) _____	# of Additional Guests: _____ x \$50 = \$ _____ (H)

<b>TOTAL AMOUNT DUE (Add Lines A, B, C, D, E, F,G,H)</b>	<b>\$</b>
--	-----------

<b>PAYMENTS: CREDIT CARD WILL BE CHARGED 30 DAYS PRIOR TO ARRIVAL</b>	
<input type="checkbox"/> Payment by check	Check No. _____ Total Payment Amount: \$ _____
Please make checks payable to: <b>MC and A</b>	
<input type="checkbox"/> Payment by MC/Visa/Amex	Card No. _____ Exp. Date _____
Name _____	Signature _____ Date _____
on Card: _____	
Destination Hawaii/MC and A will charge a \$10 per person, per change processing fee for any change or cancellation.	

PLEASE MAIL OR FAX YOUR REGISTRATION TO:  
Destination Hawaii/MC and A,  
PCEA REGISTRATION

615 Piikoi St, 10<sup>th</sup> Fl., Honolulu, HI 96814 Phone: (808) 589-5500 Fax: (808) 589-5501  
For air and/or car reservations visit [www.destinationhawaii1.com](http://www.destinationhawaii1.com) and click on Wholesale Travel Services link.

COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 1 of 7



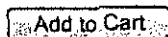
**COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS  
(prep: CEM Certification)**

Earns 3.6 CEU / 36 PDH



**Member/Government/Non Profit Price: \$1,495.00**  
**Non-Member Price: \$1,695.00**

Quantity: 1      Dates:



**Note:** Registering for the seminar does not automatically register you to take the CEM exam. To complete the certification application process (\$200 fee) and qualify to sit for the exam, or for more information on CEM certification, [CLICK HERE](#).

AN IN-DEPTH PREPARATORY COURSE FOR THE  
CEM EXAMINATION

**A 5-DAY SEMINAR**

**LOCATIONS & DATES**

**Keystone, CO / July 9-13, 2007**  
Keystone Resort & Conference Center / (800) 258-0437

**New Orleans, LA / July 30 - August 3, 2007**  
Hilton New Orleans Riverside Hotel / (504) 561-0500  
(specify Energy 2007 room block)

**St. Louis, MO / August 6-10, 2007**  
Doubletree St. Louis at Westport / (314) 434-0100

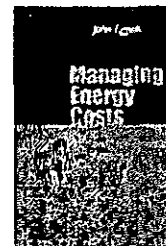
**Atlantic City, NJ / September 24-28, 2007**  
Resorts Casino Hotel / (609) 441-5000 or (800) 225-5977

**Chicago, IL / October 15-19, 2007**  
Hotel Indigo Chicago Northwest / (847) 359-6900

\* **Honolulu, HI / November 5-9, 2007** \*

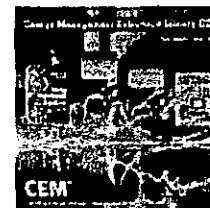
Waikiki Beach Marriott Resort / (808) 922-6611

**Also Available...**



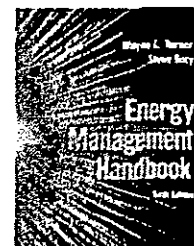
**MANAGING  
ENERGY COSTS: A  
BEHAVIORAL AND  
NON-TECHNICAL  
APPROACH**  
John Eggink

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Stephen W. Fardo,  
Ray E. Richardson  
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**Software-Based  
Energy Systems  
Master Planning  
Online Seminar**  
Earns 0.2 CEU / 2  
PDH

COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 2 of 7

Miami, FL / December 10-14, 2007  
Grand Bay Miami / (877) 424-7683

[Click Here for More Information](#)

Live Seminar

**FAST TRACK CEM PREPARATORY COURSE FOR ENERGY MANAGERS**  
Earns 1.6 CEU / 16 PDH

## ABOUT THE SEMINAR

This special 5-day seminar provides an in-depth, comprehensive learning and problem-solving forum for those who want a broader understanding of the latest energy cost reduction techniques and strategies. The program begins by examining the basic fundamentals within all key areas of energy management. From there, the instructors systematically move to a "working level" knowledge the specific principles and techniques needed to really get the job done. This approach has been specially designed to fulfill the needs of professionals who seek a broader and more detailed learning experience than can be provided in AEE's shorter courses. In only five days, can gain the knowledge and confidence it takes to effectively apply state-of-the-art principles of energy management, and to achieve control over energy costs in your organization — whether you're responsible for managing a single facility or developing an energy management program for multiple corporate facilities, government buildings, etc. AEE's most requested program, this seminar has been completed by thousands of professionals since its inception in 1994.

[Click Here for More Information](#)

Live Seminar

**CREATING A SUSTAINABLE ENERGY MANAGEMENT PROGRAM**  
Earns 1.6 CEU / 16 PDH

[Click Here for More Information](#)

Live Seminar

**FUNDAMENTALS OF BUSINESS ENERGY MANAGEMENT (prep: BEP Certification)**  
Earns 1.6 CEU / 16 PDH

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The CEM certification process requires the submitting of a separate application and \$200 application fee, which qualifies you to sit for the exam. The CEM examination is administered at each seminar site beginning at 11:00 am on day 5 of instruction — only to those candidates who have met the above requirements. To obtain/print your CEM application form or see further information on the CEM program, visit [www.aeecenter.org/certification/cecm](http://www.aeecenter.org/certification/cecm).

SELF-STUDY Training Seminar

**Basics of Energy Management Self-Study Seminar**  
Barney Capehart, PhD, C.E.M.

[Click Here for More Information](#)

REALTIME Online Seminar

**Developing an Energy Management Master Plan Online Seminar**  
Earns 0.6 CEU / 6 PDH

[Click Here for More Information](#)

REALTIME Online Seminar

**Creating a Sustainable Energy Plan Online Seminar**  
Earns 0.6 CEU / 6 PDH

[Click Here for More Information](#)

SELF-STUDY Training Seminar

**Building Energy Management Self-Study Seminar**  
Earns 1.0 CEU / 10 PDH

## SEMINAR OUTLINE

### THE NEED FOR ENERGY MANAGEMENT

Building energy cost control  
Utility DSM programs and deregulation — energy efficiency and peak demand reduction  
Commercial business energy cost control  
Industrial plant operation improvement:  
— Reducing energy costs  
— Reducing environmental emissions  
— Improving product quality  
— Improving plant productivity

### CONDUCTING AN ENERGY AUDIT

Purpose of the energy audit  
Facility description and data needs  
Major systems in the facility

COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 3 of 7

Data forms for recording information  
Collecting the actual data  
Identification of preliminary energy management opportunities

**ENERGY AUDIT INSTRUMENTATION**

The need for instrumentation  
Light level meters  
Electric meters – Voltages, current, power, energy, power factor  
Temperature-measuring instruments  
Combustion efficiency measurement  
Air flow and air leak measurement  
Thermography  
Data logging

**ENERGY CODES AND STANDARDS**

Building codes  
ASHRAE standards (62, 15, 3, 90.1)  
ASME, IEEE, and other standards  
Federal legislation – NECPA, PURPA, NGPA, CAAA, NEPA of 1992  
CFC replacements – Montreal Protocol, Global Climate Change  
National Energy Policy Act of 2005  
Proposed tax incentives 2002

**BUILDING ENERGY USE AND PERFORMANCE**

Fuel types and costs  
Energy content of fuels  
Energy conversion factors  
Building envelope  
Natural gas purchasing  
Retail wheeling of electricity  
Major building energy use systems

**ENERGY ACCOUNTING IN BUILDINGS AND FACILITIES**

Energy use index, energy cost index  
Where energy is used in facilities  
Lighting and HVAC energy use

**ENERGY RATE STRUCTURES**

Identifying types of energy used  
Electric rates, gas rates  
Oil, coal, and other rates  
Steam and hot water rates  
Factors in controlling fuel costs  
Utility incentive programs

**ELECTRIC RATE STRUCTURES**

Short history of electric rates  
The difference between power and energy  
Electric meters  
Components of electric rates  
Example rate structures  
Factors in controlling electric costs  
Electric utility incentive programs  
Special schedules (interruptible, TOU, real-time pricing)



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**SKILLS UPDATE  
2007 FOR  
CERTIFIED  
ENERGY  
MANAGERS**  
Earns 1.6 CEU / 16  
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**GUIDE TO ENERGY  
MANAGEMENT,  
5th Edition**  
Barney L. Capehart,  
Wayne C. Turner,  
and William J.  
Kennedy

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COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 4 of 7

**ECONOMIC ANALYSIS OF ALTERNATIVE INVESTMENTS**

Economic decision analysis  
Simple economic measures  
The time value of money  
Present and future values  
Cost and benefit analysis  
After tax cash flows

**ALTERNATIVE FINANCING**

Role of performance contracting  
Different sources (loans, stock sales, bonds, etc.)  
FEMP and alternative financing  
True lease, capital lease, bonds, etc.

**WASTE HEAT RECOVERY**

Objectives; design criteria  
Types and maintenance of heat exchangers  
Recuperators; economizers

**LIFE CYCLE COSTING**

Concept of life cycle costing  
Purchase costs vs. operating costs  
Example analyses  
Government standards --- FEMP

**FUEL SUPPLY AND FUEL SWITCHING**

Alternative fuel choices  
Technology choices - HVAC systems, boilers, heaters, industrial processes  
Benefits of deregulation - electric, gas, and oil

**ELECTRICAL ENERGY MANAGEMENT**

Peak load reduction  
Power factor improvement  
Energy management control systems  
Load management  
Harmonics and other power quality issues

**LIGHTING**

Basics of lighting and current lighting technologies  
New lighting technologies  
Economic evaluation of example lighting improvements  
Lighting standards  
EPA Green Lights program  
T12, T8, T5 lamps  
Compact fluorescents  
HID, sulfur lamps

**MOTORS AND ADJUSTABLE SPEED DRIVES**

How motors work  
High-efficiency motors  
Examples of cost-effective motor changes  
Use of adjustable speed drives  
Example of cost-effective ASD use  
Improved motor belts and drives  
Compressed air management  
Adjustable speed drive alternatives:  
- eddy current clutches

COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 5 of 7

- permanent magnet clutches
- variable frequency drives
- inlet and outlet vane control, etc.

**HVAC SYSTEM**

Types of HVAC systems and new technologies  
The vapor-compression cycle  
Air conditioning loads  
Chiller improvement example  
Control, thermal storage, absorption systems

**CONTROLS AND ENERGY MANAGEMENT**

Night set back  
Optimum start/stop  
Enthalpy economizers  
Temperature resets  
PID controls, pneumatic controls  
Control characteristics  
DDC

**INSULATION**

Types of insulation  
Heat flow calculations  
Economic levels of insulation  
Passive thermal energy  
Process insulation

**BOILERS AND STEAM GENERATION**

Basics of combustion systems - excess air control  
Boiler efficiency improvement - blowdown management, condensate return, turbulators  
Combustion controls  
Waste heat recovery  
Steam traps - purpose and testing  
Process insulation  
Example of boiler improvement

**COGENERATION (CHP)**

What is cogeneration  
Types of cogeneration cycles  
Examples of cost-effective use of cogen  
QF's and deregulation  
Use of waste for fuel  
Fuel cells, microturbines, etc.

**MAINTENANCE**

Maintenance management systems  
Monitoring for maintenance  
Infrared photography for maintenance  
Cost of - Air, steam, gas leaks; uninsulated surfaces

**ALTERNATIVE FINANCING**

Different financing methods  
Attributes of each method  
After-tax cash flow analysis



COMPREHENSIVE 5-DAY TRAINING PROGRAM FOR ENERGY MANAGERS <br... Page 6 of 7

## ABOUT THE INSTRUCTORS

**BARNEY L. CAPEHART**, Ph.D., C.E.M., is a professor emeritus of industrial and systems engineering at the University of Florida in Gainesville. He has broad experience in the commercial/industrial sector having served as director of the University of Florida Industrial Assessment Center from 1990 to 1999. He personally conducted over 100 audits of industrial facilities, and has helped students conduct audits of hundreds of office buildings, small businesses, government facilities, and apartment complexes. He regularly taught a University of Florida course on energy management to about 50 engineering students each year, and currently teaches energy management seminars around the country for the Association of Energy Engineers (AEE). A fellow of IEEE, IIE, and AAAS, and a member of the Hall of Fame of AEE, he has contributed to several well-known texts in the field.

**WAYNE C. TURNER**, Ph.D., P.E., C.E.M., is a regents professor in the School of Industrial Engineering and Management at Oklahoma State University. As founder/director of OSU's Energy Analysis and Diagnostic Center, he has conducted or supervised well over 700 energy audits for industrial and commercial facilities. Dr. Turner has broad experience in energy management, and has authored five textbooks and numerous articles in professional magazines and journals. He has won many teaching and professional awards, and is listed in several Who's Who. He has served as past president of the Association of Energy Engineers (AEE) and is in AEE's Hall of Fame.

**WARREN M. HEFFINGTON**, Ph.D., P.E., C.E.M., is the founding director of the Industrial Assessment Center at Texas A&M University, which has provided over 450 industrial assessments. The U.S. DOE has contracted with this center to provide national training on the industrial assessment process. Dr. Heffington personally has directed about 200 industrial assessments and has supervised the review of over 300 energy audit reports for commercial and institutional buildings. He has been active in research on industrial demand and duty factors, and on the energy audit process. He is an associate professor of mechanical engineering at Texas A&M University, where he teaches a graduate course in industrial energy management.

### NEW ORLEANS COURSE ONLY:

**STEVE SAIN**, P.E., C.E.M., C.M.V.P., C.E.P. is President of Sain Engineering Associates (SEA) in Birmingham, Alabama. SEA is a leading provider of Resource

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Efficiency Management (REM) services for facility owners/operators, worldwide. Mr. Sain brings to this program more than twenty-five years of experience in the energy engineering industry, including involvement in numerous energy efficiency and alternative financing projects, especially in United States Federal agencies.

**T. KENNETH SPAIN, P.E., C.E.M., C.L.E.P.,** is an experienced energy analyst with over two decades of experience helping clients find ways to reduce energy costs. Mr. Spain is a Senior Research Associate at the University of Alabama in Huntsville, where he also serves as project manager of IdEA\$, the Industrial Energy Advisory Service. The purpose of IdEA\$ is to advise business, industrial, institutional, and governmental clients regarding cost-effective applications of energy-saving technology.

## FEES

**Note:** Fees below are for seminar only. Application for CEM certification and exam requires a separate fee of \$200. Registering for the seminar does not automatically register you to take the CEM exam.

Regular Fee: \$1695

AEE Member Fee: \$1495\*

Government & Nonprofit Fee: \$1495

Team Discount: Deduct \$100 per Registrant\*

\*How to qualify for member rates and team discounts.

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## REGISTRATION ASSISTANCE

For assistance or questions pertaining to your seminar registration, please contact the registrar directly during the hours of 10:00 am -5:00 pm (eastern time U.S.) at (770) 925-9633, or email her at [valerie@aeecenter.org](mailto:valerie@aeecenter.org)

**Category:** [Seminars](#)

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**Suzuki, Sharon**

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**From:** esource@esource.com  
**Sent:** Monday, July 09, 2007 8:50 AM  
**To:** Cibulskis, Ray  
**Subject:** E Source event registration enrolled

This is to confirm that Ray Cibulskis has been enrolled in The 20th Annual E Source Forum.

Published on esource.com (<http://www.esource.com>)

## The 20th Annual E Source Forum

### Summary

September 25-28, 2007

St. Julien Hotel

Boulder, Colorado

Sharpen your skills and interact with professionals from across the energy industry—join us for this year's E Source Forum & Exhibit. Held exclusively for E Source members and invited guests, the Forum brings together more than 250 representatives from utilities and other energy service providers as well as corporate energy managers, government representatives, and others involved in improving and redefining how energy is delivered, purchased, and used.

Our program will offer insights on innovation in utility marketing and communications, best practices in energy-efficiency and demand-response programs, ways to improve utility customer service, the latest corporate energy management strategies, and our expert assessment of new end-use technologies and trends. In addition to keeping you current on today's critical issues, the Forum continues to foster collaboration and peer networking in a friendly, collegial atmosphere. This year, we'll be offering sessions in five different tracks:

**End-Use Technologies.** We'll deliver updates on recently commercialized technologies, important research projects, and current trends that will impact the way households and businesses use energy. We'll help you navigate the technical minefields energy users face, separate fact from fiction, and arm you with information that will help you and your customers make the best technology decisions.

**Mass Markets.** We'll be discussing challenges and best practices related to serving residential as well as small and midsize business customers, looking at effective segmentation schemes, , and developing the right mix of products and services for these market segments. Your utility peers will share their experiences from the field, and you'll learn what does and doesn't work in the real world.

**Customer Service.** Specifically designed for members of the E Source E-Business and Utility Customer Care Services, these sessions will feature case studies and research findings to illuminate the latest developments in customer service for electric and gas companies. Topics will include best practices for utility web sites and interactive voice response units (IVRUs), the links between employee satisfaction and customer satisfaction and the impact of Time of Use and dynamic pricing tariffs on the call center and web site.

**Efficiency & Demand Response.** Building on the overwhelming response to our new service in this area, this track will highlight best practices in the design, marketing, and implementation of energy-efficiency and demand-response programs.

**Marketing and Communications.** We'll tackle best practices in communicating rate increases, social marketing, creative uses of media, and ways for utilities to do community outreach through

innovative channels. Back by popular demand, our Big Dogs session will feature a panel of corporate energy managers discussion what they want and expect from their utilities.

As in previous years, all attendees will benefit from the concurrent Exhibit, which will showcase a selection of energy-related technologies and products while facilitating new and renewed business relationships among attendees and exhibitors.

## Agenda

### Tuesday, September 25

3:00 pm - 4:30 pm     *Getting the Most from Your E Source Membership*

Everyone wants to get the most value from their investments, but sometimes it's not obvious how to do it. In this session, we'll offer dozens of practical tips and suggestions for maximizing the benefit of your E Source membership. For example, we'll explain how to get the most out of your Member Inquiry privileges, how you can use information from our reports to enhance your newsletters and customer information pamphlets, and how to get access to E Source speakers for your meetings and conferences. Both existing and potential members are welcome to join us for this session.

3:00 pm - 5:30 pm     *Exhibitor set-up*

5:30 pm - 7:00 pm     *Welcome Reception*

### Wednesday, September 26

6:00 am - 7:00 am     *Wednesday morning run*

Must register in advance.

7:30 am - 8:30 am     *Wednesday Breakfast*

8:30 am - 10:00 am     *The E Source Report: All You Need to Know*

The news never stops, and energy news has never been hotter than in 2007. Even regular people—teachers, accountants, shop owners, and our very own relatives—are voicing increasing concern about energy. In this opening segment of the Forum, E Source will once again take a quirky look at the news of the day

and then interview experts in such topics as:

- Strategic marketing to key accounts and how to reach the top
- The effect of demand-side management (DSM) on customer satisfaction
- Using channels and community groups to sell efficiency
- Cutting-edge lighting technologies
- The evolution of residential and small commercial load control

10:00 am - 10:30 am *Break*

*Innovative Partners for Mass-Market Outreach*  
Marketing and Communications Track, Mass Markets Track

Although many utilities have partnered with trade associations to reach deeper into mass-market customer segments, a few cutting-edge organizations have gone outside the box to find new allies for touching these customers. These new channels include congregations, university student groups, and financial institutions. We'll explain how utilities have successfully leveraged such partnerships to enhance their outreach.

**Maureen Cureton**, Energy Manager, Community Business Banking, Vancity  
**Jerry Lawson**, National Manager, Energy Star Small Business, EPA  
**Dennis O'Connor**, Program Manager for Small Business Programs, United Illuminating

*Innovations in Program Design and Implementation for the Residential Sector*  
Efficiency & Demand Response Track

Many utilities are fine-tuning their efficiency programs and using innovative approaches to reach customers and to minimize rebate and administrative costs. Managers of established programs will provide details on how to design and implement successful DSM programs.

**Giuliana Rossini**, Director, Strategy & Conservation Officer, Hydro One

**Margaret Crawford**, Senior Marketing & Communications Specialist, Gainesville Regional Utilities

*Demand-Response Measures for Commercial Buildings*  
End-Use Technologies Track

Targeting demand-response recruitment efforts at specific market sectors can increase the likelihood of customers signing up for a program and responding to utility curtailment requests. Learn which commercial sectors are the best candidates for demand-response programs and which metrics different types of facilities rely on when participating in demand-response programs. Armed with this information, you'll be able to advise your customers whether they should turn off some lights or raise the temperature setpoint next time you call on them for load control. We'll also discuss how, in the future, your customers might not have to take any action if their facilities are able to automatically respond via sophisticated building controls.

**Doug Nordham**, EnerNOC  
**Mary Ann Piette**, Lawrence Berkeley National Lab

12:00 pm - 12:00 pm

*Wednesday Lunch*

1:30 pm - 3:00 pm

*Satisfied Employees Lead to Satisfied Customers*  
Customer Service Track

Highly engaged, conscientious customer service representatives (CSRs) consistently deliver the highest quality customer service. Recent research shows a strong correlation between employee engagement and customer satisfaction. Supervisors play a pivotal role in driving their CSRs' engagement levels and customer service satisfaction. Industry thought leader Barbara Burke and representatives from utilities that have applied her recommendations will outline an innovative team-based learning process that supervisors can use to energize, inspire, and empower their teams to deliver excellent customer service with every call.

**Barbara Burke**, Principal, Barbara Burke and Associates

*Demand-Side Management Expert Panel*  
Efficiency & Demand Response Track

Everyone in the world of demand-side management (DSM) is

running at top speed—and being asked to run even faster. An expert panel of DSM managers from around North America will lead what's sure to be a lively discussion of some of the tough issues we're all facing, including: What's the role of DSM in a carbon-constrained world? What can you do if you're asked to double or triple your DSM portfolio in a year? What's the right balance between efficiency and demand response?

**Giuliana Rossini**, Director, Strategy & Conservation Officer,  
Hydro One  
**Michael Goldenberg**, Duke

*Innovation in Cooling Technologies*  
End-Use Technologies Track

Sometimes teaching an old dog a new trick is much better than getting a new dog. The same can be true for space cooling technologies. Clever researchers identified niches in which chillers and economizers weren't working very well and found ways to make these technologies perform more effectively. These innovations have the potential to increase energy savings opportunities for cooling efficiency programs.

**Reid Hart**, Engineering Supervisor, Eugene Water & Electric Board  
**Dan Thatcher**, Vice President, Turbocor

*A Strong Foundation: Working with the Builder and Developer Community*  
Mass Markets Track

Small and midsize businesses, builders, and developers constitute an important class of end-users for utilities. They can also help utilities make inroads into their residential customer market. We'll detail what these businesses are looking for from their utility, the potential for partnerships with them, and best practices for serving this market segment.

**Leland Keller**, Member Inquiry Honcho, E Source

3:00 pm - 3:30 pm     *Break*

3:30 pm - 5:00 pm     *Price Increase Communications: Turning Lemons into Lemonade*  
Customer Service Track, Marketing and Communications Track, Mass Markets Track



The delivered retail price of electricity and natural gas is on the rise. Despite today's dynamic media market, many utilities are simply reusing the communications plan developed for their last rate case—when Ronald Reagan was president! Utilities can't hope to win today's battle for customer's hearts and minds using yesterday's concepts and tools. A panel of communicators will discuss what their organizations have done to prevent price increases from sinking customer satisfaction and creating a public outcry against the utility.

**John Hutchinson**, General Manager, Public Affairs, Gulf Power

**Nelson Ross**, Supervisor of Corporate Communications, SRP

*Data Centers: They're Back and They're Badder than Ever*  
End-Use Technologies Track

When the tech boom went bust early this decade, the data center industry collapsed. But over the past year, the good times returned, and data centers are now expanding in both number and size. In addition, the global energy consumption and power density of computer servers used in these centers are also on the rise. Those combined trends are creating new stresses for data center operators as well as for the utilities that serve these facilities. We'll explore new techniques and programs for processing more bytes while using less energy.

**William Tschudi**, Lawrence Berkeley National Lab

3:30 pm - 6:00 pm     *Wednesday afternoon hike*

*Wednesday afternoon bike ride*

*Wednesday afternoon run*

*National Oceanic and Atmospheric Administration's Science*  
*On a Sphere*

Science On a Sphere is an animated globe that can show dynamic, animated images of the atmosphere, oceans, and land of a planet. NOAA primarily uses SOS as an education and outreach tool to describe the environmental processes of Earth.

6:30 pm - 10:00 pm     *Exhibitor-hosted reception and dinner*

Must register in advance.

The 20th Annual E Source Forum

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**Thursday, September 27**

6:00 am - 7:00 am     *Thursday morning hike*  
Must register in advance.

7:30 am - 8:30 am     *Thursday Breakfast*

8:30 am - 10:00 am     *The Converging Imperatives of Climate Change and Demand-Side Management*

Increasing concern over climate change is bringing intense pressure on utilities and their large customers to reduce greenhouse gas emissions. What level of energy savings and emissions reduction can we deliver with DSM, how quickly, and at what cost? How do climate-friendly supply options fit into the picture? And how will the shifting policy landscape affect the business of energy?

**Michael Shepard**, President, E Source

**Ralph Cavanagh**, Energy Program Director, Natural Resources Defense Council

**Tom Eckman**, Manager, Conservation Resources, Northwest Power and Conservation Council

10:00 am - 10:30 am     *Break*

10:30 am - 12:00 pm     *Best Practices from the 2007 E Source Interactive Voice Response Benchmark Study*  
Customer Service Track

In 2007 E Source completed the most comprehensive benchmarking study of utility interactive voice response (IVR) units to date. One-third of the electric and gas utilities in North America actively participated in this study, giving us access to their secure IVRs. We'll present top-line results from this in-depth research along with some key findings and recommendations. We'll also share the industry rankings and give specific examples of utility best practices for a wide range of IVR transactions.

*Getting the EE in GrEEen Buildings*

Efficiency & Demand Response Track, End-Use Technologies Track

Green buildings are hugely popular—but are they energy efficient? We know how to construct buildings that use much

less energy than standard buildings, yet market penetration is still low. We'll look at results from completed green buildings and explore innovative utility programs that capitalize on both public enthusiasm for green and sound building science. Our panelists will share information on program designs and outreach options that work, discuss techniques for reaching decision-makers, and explain how standardized programs such as LEED and Energy Star fit into their portfolios.

**Michael McAteer**, Manager, Business Efficiency Services,  
National Grid USA

**Adam Hinge**, Principal of Sustainable Energy Partnerships

**Paul Torcellini**, National Renewable Energy Lab

*Mass-Media Mania*

Marketing and Communications Track

We'll explore a potpourri of creative ideas for getting utility messages out to customers. Innovative approaches include using television shows, viral marketing, YouTube and other Internet video options. You'll be able to find ideas that fit your budget, your markets, and your message.

**Noel Hatcher**, Consumer Segment, Xcel Energy

**Robin Sempf**, Alliant Energy

*Latest and Greatest: New Trends in Mass-Market Products and Services*

Mass Markets Track

Developing new offerings for mass-market customers is like trying to hit a moving target. For utilities, the driver for creating new programs and services for these customers has shifted from increasing revenue to enhancing customer satisfaction. We'll review some of the most promising new mass-market products and services, including some that are related to efficiency and financing.

**Dennis O'Connor**, Program Manager for Small Business Programs, United Illuminating

**Adam Capage**, 3 Phases

12:00 pm - 1:30 pm *Thursday Lunch*

1:30 pm - 3:00 pm *Peer Problem-Solving: Improving Customer Service*  
Customer Service Track

Meeting customer expectations for service delivered through

your call center, your IVR system, e-mail, and your web site are challenges utilities must meet every day. However, as utilities turn to new customer service channels, more opportunities for not meeting customer expectations arise. We'll lead an open discussion about the best ways to identify and solve problems, facilitate the sharing of ideas and experiences, and help identify best-practice solutions for improving customer service.

*Realizing the Full Potential of Demand Response*  
Efficiency & Demand Response Track

Demand-response (DR) initiatives are becoming more common at utilities and independent system operators as a way to potentially defer investment in new power plants, upgrading transmission infrastructure, or purchasing costly power. Determining which customers are willing to shed load—and how much—requires a blend of engineering, statistics, and behavioral psychology. Our speakers will explain how they assess DR potential, look at the results some of the more aggressive utilities are obtaining, and offer suggestions for how utilities can better integrate DR with the rest of their operations.

**Chuck Goldman**, Staff Scientist, Lawrence Berkeley National Laboratory  
**Bernie Neenan**, President, Neenan Associates

*Bringing Technology to Light*  
End-Use Technologies Track

So many lights, so many options. Want to learn about the latest in lighting technologies—what works, what doesn't, and why? Interested in case studies that can help you plan your next project or design your next incentive program? Want to see and touch the hardware? If you'd like to be amazed, entertained, and enlightened, come find out about new lighting products, the impact they might have on energy use and demand, and how to get customers to use them.

**Robert Sardinsky**, President, Rising Sun Enterprises, Inc.

*Next Steps in Mass-Market Segmentation*  
Mass Markets Track

Utilities trying to decide what the next steps should be for their segmentation schemes often find it hard to make the leap from gathering and classifying data to making the information pay off in terms of increased customer engagement. Find out what

your data can tell you about customer buying behaviors and how advanced segmentation techniques can boost that pay off.

3:00 pm - 3:30 pm     *Break*

3:30 pm - 6:00 pm     *Tour of Celestial Seasonings*

Tour the factory floor where 8 million pungent tea bags are produced daily, walk through the company Art Gallery to view original paintings for Celestial Seasoning tea box graphics, and sample a new flavor or enjoy an old favorite Celestial Seasoning Tea!

*Trip to Flatirons Crossing Mall*

*Thursday afternoon hike*

*Thursday afternoon bike ride*

*Thursday afternoon run*

6:30 pm - 8:30 pm     *Dine Around Boulder*

A separate fee applies

**Friday, September 28**

6:00 am - 7:00 am     *Friday morning run*

Must register in advance.

7:30 am - 8:30 am     *Friday Breakfast*

8:00 am - 10:00 am     *Online and IVR Payment and Billing  
Customer Service Track*

Getting more customers to view and pay their bills electronically is a critical objective for utility e-business and customer care professionals. Join leading industry experts for a lively panel discussion in which we'll explore how to achieve this important objective. We'll also share results from 2007 E Source surveys about adoption rates for web and IVR payments, paperless billing, and credit-card payments.

**Bryan Serinese**, Web Channel Communications, Sacramento  
Municipal Utility District  
**Randy Vance**, E-Services Product Manager, Kansas City  
Power & Light Company  
**Tom Cunningham**, Manager, Voice Interaction Technologies,  
Duke Energy Corporation

*Innovations in Program Design and Implementation for the  
Commercial and Industrial Sectors*  
Efficiency & Demand Response Track

Many utilities are fine-tuning their efficiency programs and using innovative approaches to reach customers and to minimize rebate and administrative costs. Managers of established programs will provide details on how to design and implement successful DSM programs.

**Sherrye Hutcherson**, Division Manager, Customer Solutions,  
OPPD  
**Kevin Cooney**, Principal, Summit Blue  
**Heather Davidson-Meyn**, Consultant, IndEco Strategic  
Consulting Inc.

*The Big Dogs Speak Again*  
Marketing and Communications Track

Join a panel of corporate energy managers from several Fortune 1,000 companies as they tell us what they want from their energy providers, what they think of the service they're receiving today, and what issues are keeping them awake at night. This promises to be a no-holds-barred session.

*Why Is Everyone So Excited About CBSM?*  
Marketing and Communications Track, Mass Markets Track

Community-based social marketing (CBSM) isn't all new, but the buzz around it in the energy services world is. Utilities and energy service companies are recognizing that they can take the strategies and rules-of-thumb from social marketing and apply them to their own outreach efforts, helping to convince customers to sign up for demand-response programs, purchase energy-saving equipment, or simply turn off their lights. Just sending out brochures doesn't generate much response, and neither do rational but uninspiring cost-saving arguments. Learn fr

10:00 am - 10:15 am *Break*

10:15 am - 11:40 am *Factor-10 Engineering: Advanced Design Integration for Radical Savings at Lower Cost*

Optimizing whole systems for multiple benefits rather than optimizing isolated components for single benefits can often result in very large energy savings that cost less than small or no savings. This "tunneling through the cost barrier"—earning expanding rather than diminishing returns from investment in negawatts—has now been observed in tens of billions of dollars' worth of projects in more than 20 market sectors. It's just one of the ways in which new technologies and design methods continue to make electrical savings bigger and cheaper.

**Amory Lovins**, CEO and Director of Research Rocky Mountain Institute

11:40 am - 11:45 am *Closing Remarks*

12:00 pm - 1:00 pm *Friday Lunch*

Must register in advance.

## **Fees**

### **Registration fees**

**Member seats assigned by contract**  
complimentary

**Member**  
\$950 for additional seats

**Non-Member**\$1,500

**Speaker**  
complimentary

**Primary exhibitor**  
\$2,450

**Additional exhibitor**  
\$1,200

#### Activity fees

**Dine around on Thursday**  
\$55

#### Staff

**Janice Field** Manager, Conferences & Fulfillment E Source 303-345-9112 Contact Janice Field

#### Hotel and Transportation

##### Hotel reservations

**The St. Julien Hotel**  
900 Walnut Street  
Boulder, CO 80302

The conference room rate is \$209, plus tax. If your schedule permits, plan on coming a day early or staying a day late to enjoy all this world-renowned city has to offer.

Online reservations are currently available at the St. Julien:

- Go to [www.stjulien.com](http://www.stjulien.com)
- Select Reservation - Reserve Online Now
- Click on GROUP RESERVATION button
- Enter following information:
  - Group ID:** 1120
  - Password:** 37000042
- Select Make a Reservation

Reservations can also be made by contacting the hotel directly at 720-406-9696 or 877-303-0900, or [reservations@stjulien.com](mailto:reservations@stjulien.com)

##### Ground Travel

**Shuttle service:** The St. Julien is approximately a 1-hour ride from the Denver International Airport. Reservations from the airport are not required, but they are necessary from the St. Julien. You may either contact the concierge at the St. Julien for your return trip or call SuperShuttle directly at 303-227-0000. The cost is \$22 one way or \$44 round trip. SuperShuttle leaves 10 minutes after the hour from Denver International Airport, and 35 minutes after the hour from the St. Julien.

Rental cars are also available at Denver International Airport.

**Directions from DIA:** Exit DIA on Peña Boulevard. Continue until you reach I-70 west. Take I-70 west to the I-270 north exit toward Fort Collins. Take I-270 north to



the U.S. Hwy 36 west exit, toward Boulder. Continue on Hwy 36 to Boulder. Or Take the toll road exit to E-470 north from Peña Boulevard to the Northwest Parkway toward Broomfield and connect to U.S. 36. Continue west on Hwy 36 to Boulder. The toll road costs \$6.00 one-way.

## **Networking and Fun**

### **Networking and Fun**

The E Source Forum gives participants a great opportunity to network with peers and exchange the latest cutting-edge information in a friendly, collegial atmosphere. We will be offering a variety of activities throughout the Forum, including:

#### **Tuesday**

Opening reception

#### **Wednesday**

Hiking  
Biking  
Running  
Exhibitor reception and dinner

#### **Thursday**

Hiking  
Biking  
Running  
Tour of Celestial Seasonings Tea  
Trip to Flatirons Crossing Mall  
Dine-around in downtown Boulder (a separate fee applies)

#### **Friday**

Lunch in downtown Boulder

Networking opportunities subject to change.

## **Boulder, Colorado**

### **Boulder, Colorado**

The 20th Annual E Source Forum will be held in Boulder, Colorado. When you crest the last hill on Highway 36 into Boulder, it's easy to see why this intriguing town has been dubbed "the city nestled between the mountains and reality." At 5,430 feet above sea level, acres of vast open space roll into Boulder's quaint cityscape, which is tucked

The 20th Annual E Source Forum

Page 15 of 15

into the foothills of the Rocky Mountains. Located 35 miles northwest of downtown Denver, Boulder is a captivating mountain community enriched with natural beauty, hip urban culture, and a vibrant love of the outdoors.

**Source:** Boulder Convention and Visitor's Bureau  
<http://www.bouldercoloradousa.com/>

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**Source URL:**  
[http://www.esource.com/print/ee\\_event/23023](http://www.esource.com/print/ee_event/23023)

CA-IR-251

**Ref: Response to CA-IR-154, page 6 (Info Advertising).**

The response indicates actual Account 911 Maui spending for year to-date 2007 of only \$2,042, relative to projected spending of \$30,000. Please provide the following information:

- a. Explain all plans to increase spending to proposed test year levels.
- b. Provide all available studies, reports, surveys analyses and other information relied upon by MECO to determine that historical spending on information advertising at levels at or below \$20,000 annually have been inadequate.
- c. Copies of all contracts, invoices and other documents indicating a commitment by MECO to increase actual informational advertising to projected test year levels.

**MECO Response:**

- a. The Company has several plans in place for both our print and radio informational advertising for the remainder of the test year. In May 2007, the Company ran print ads and radio spots regarding the risks with mylar balloons to coincide with graduation season. In June and July, 2007, the Company ran four ads informing the public of the dangers of tampering and defacing MECO equipment. This summer, the Company will be running a campaign to inform the public of the dangers associated with tampering and theft of copper wire, as well as advertisements for the Company's annual "MECO in Our Community" event, an informational fair for members of the community. Numerous print ads will be run during the third and fourth quarters about electrical safety and energy conservation, while radio ads will run spots on the dangers of tree trimming and utility pole litter. Finally, the holiday safety campaign for both print and radio will run during the holiday season beginning in November 2007. The Company is also planning to run numerous ads and spots to educate customers on the Company's commitment to renewable energy.

- b. No specific studies or analyses have been done to determine the optimum level of advertising expenditures.
- c. See Attachment A.

February 26, 2007  
DATE

Maui Electric Company  
ADVERTISER

AGENCY

P.O. Box 398  
Kahului, HI 96732  
ADDRESS

808-872-3263  
CUSTOMER PHONE # / FAX #

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Kau'i Awai - Dickson  
CONTACT NAME/EMAIL

**Sherri Grimes**  
**ACCOUNT EXECUTIVE**

☒ CASH    ☐ OTHER



Station	Start Date	End Date	Sec	Daypart	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL ADS	RATE	TOTAL COST
KPOA FM	March '07	Feb. '08	30	4-TAP	3	3	3					9	Wk. 1	\$598 mo.
			30	4-TAP	4	3	3					10	Wk 2	\$0.00
			30	4-TAP	3	3	3					9	Wk 3	\$0.00
												0		\$0.00
			30	ROS	3	3	3					9	Wk 1	\$0.00
			30	ROS	4	3	3					10	Wk 2	\$0.00
			30	ROS	3	3	3					9	Wk 3	\$0.00
												0		\$0.00
												0		\$0.00
KJKS FM	March '07	Feb. '08	30	4-TAP	3	3	3					9	Wk 1	\$386 mo.
			30	4-TAP	4	3	3					10	Wk 2	\$0.00
			30	4-TAP	3	3	3					9	Wk 3	\$0.00
												0		\$0.00
			30	ROS	3	3	3					9	Wk 1	\$0.00
			30	ROS	4	3	3					10	Wk 2	\$0.00
			30	ROS	3	3	3					9	Wk 3	\$0.00
												0		\$0.00
TOTALS:					40	36	36	0	0	0	0	112		984 mo.

✓ NEW [ ] REVISION

ADDITIONAL CONDITIONS:

Schedule will run the first three weeks of each month. Schedule may change as needed with given month.

Net	\$984. mo
Tax	\$40.93
<b>Net</b>	<b>\$1024.93 mo.</b>

Client understands and agrees that the above rates are for the terms of this contract. If fewer commercials are used, client will be charged applicable short-rate as determined by current rate card in effect at the time the schedule is finalized. Norman radio production is included, however, an extra charge (minimum \$50) may be assessed for excessive copy changes or more difficult production. Either party must submit a 2 week in advance written cancellation notice to cancel Pacific Radio Group's contract.

All accounts are due and payable upon receipt. 2% discount within 15 days of invoice date. A deposit may be required before the granting of credit, pending a check of credit reference. Advertiser shall be liable in relation for all costs of collecting advertiser's account including a reasonable sum for attorney's fee. Total dollars owed in Hawaii State Tax

ACCEPTED FOR AGENCY OR ADVERTISER

ACCEPTED FOR RADIO STATION

CA-IR-252

**Ref: MECO-928 and Response to CA-IR-161 (Pension Asset).**

Page 3 of the response to CA-IR-161 sets forth the pension asset/liability and related ADIT balance included in rate base in the Company's last rate case (Docket No. 97-0346). Please confirm that the pension liability of \$1,200,500 and the related debit ADIT balance of \$467,115 resulted in a net reduction to rate base of \$733,385. If this cannot be confirmed, please explain.

**MECO Response:**

This will confirm that the pension liability of \$1,200,500 and the related debit ADIT balance of \$467,115 resulted in a net reduction to rate base of \$733,385 in MECO's last rate case.

CA-IR-253

**Ref: MECO T-9, page 104, and Response to CA-IR-162 (Pension Asset).**

In response to part (b) of CA-IR-162, MECO T-9 states, in part:

The testimony quoted above is not based on any specific calculations of overall revenue requirements. However, the large negative accruals from 2000-2002 clearly reduced revenue requirements, other things being equal, and were certainly a substantial factor (but not necessarily the only factor, as indicated by the word "helped" in the above quoted testimony) in avoiding the need for a rate increase filing.

Please provide the following:

- a. Please define the term "revenue requirements" as used in this context.
- b. Does MECO (and witness T-9) believe that every year is a test year for revenue requirement purposes? Please explain.
- c. Does MECO (and witness T-9) believe that the Company or the Commission determines the appropriate test year for purposes of determining revenue requirement? Please explain.
- d. Does MECO (and witness T-9) believe that the Company or the Commission determines the appropriate revenue requirement for any selected test year? Please explain.
- e. For each calendar year during the period 2000 through 2002, please provide the amount of any Commission determined revenue requirement, with pinpoint reference to and copies of any documents associated with each such determination. If none, please so state.

**MECO Response:**

- a. As used in this context, the term "revenue requirements" is defined as the amount of revenue required for the Company to cover its expenses, depreciation, taxes, and a fair and reasonable rate of return on its rate base.
- b. MECO periodically evaluates whether a rate increase filing is needed. When MECO files a request for a rate increase, such request is based on estimated total revenue requirements for a normalized test year. Although every year has the potential to become a test year in a

general rate increase application proceeding, the Company may not file such an application for a general rate increase in every year.

- c. If MECO files an application requesting Commission approval of a general rate increase, such application, including the determination of the appropriate test year, would be filed pursuant to the Rules of Practice and Procedure before the Public Utilities Commission, Title 6, Chapter 61, H.A.R. ("Rules of Practice and Procedure").
- d. If MECO files an application requesting Commission approval of a general rate increase, such application would contain the total increase requested, which would be based on the Company's calculations of total revenue requirements. Thereafter, the Commission may authorize the amount of rate increase, if any, it finds to be fair and reasonable pursuant to the provisions of Section 269-16, H.R.S. and in accordance with the Commission's Rules of Practice and Procedure.
- e. MECO did not file any applications for general rate increases with the Commission for the years 2000 through 2002, and therefore, is not aware of any Commission determined revenue requirement calculations or amounts for this period.



CA-IR-254

**Ref: MECO T-9, page 104, MECO-928, and Response to CA-IR-162 (Pension Asset).**

In response to part (b) of CA-IR-162, MECO T-9 states, in part:

The testimony quoted above is not based on any specific calculations of overall revenue requirements. However, the large negative accruals from 2000-2002 clearly reduced revenue requirements, other things being equal, and were certainly a substantial factor (but not necessarily the only factor, as indicated by the word "helped" in the above quoted testimony) in avoiding the need for a rate increase filing

Please provide the following:

- a. The quoted response indicates that the large negative accruals were a substantial factor, but not the only factor, that allowed MECO to avoid filing a rate increase request during the period 2000-2002. Please identify each other "substantial factor" that contributed to the avoidance of rate filings during this time period. If none, please so state.
- b. In response to part (a) of CA-IR-162, the Company confirmed that the negative NPPC accruals totaled (\$6,041,000) during calendar years 2000-2002. Please provide a similar quantification of each other "substantial factor" identified in response to part (a) above.
- c. For each "substantial factor" identified in response to parts (a) and (b) above, please identify any related items MECO has proposed to include in rate base in the pending rate case. If none, please so state.

**MECO Response:**

- a. As indicated in MECO's response to part a of CA-IR-171, financial planning (which includes the possible filing of a rate case application to increase revenues) involves consideration of all factors that affect revenue requirements, just as rate cases consider all factors that affect revenue requirements. Because consideration is collectively given to all factors that affect revenue requirements, the Company does not from year to year specifically identify and quantify the extent to which each factor, if any, contributes to the avoidance or deferral of a rate increase application.

With respect to the above quoted portion of MECO's response to part b of CA-IR-162, the Company's intent was to note the impact of the large negative NPPC accruals, all other things being equal.

- b. Not applicable.
- c. Not applicable.

CA-IR-255

**Ref: MECO MECO-928, and Response to CA-IR-163 (Pension Asset).**

In response to part (e) of CA-IR-163, MECO T-9 states, in part:

All other things remaining the same, the increase in NPPC from a negative \$1,496,000 in 2002 to a positive \$2,127,000 in 2003 (amounts shown on MECO-928, page 1) was a factor, but not the only factor, which contributed to reduced earnings that caused MECO's 2003 rate of return on average rate base to be lower than its allowed rate of return. MECO did not, however, implement any increases to its tariff rates to flow through the increased NPPC costs since its tariff rates were already set.

Referring to MECO-928, NPPC swung from a negative \$1,496,000 in 2002 to a positive \$2,127,000 and remained positive in each subsequent year. Please provide the following:

- a. Since NPPC remained positive subsequent to 2002, please identify each "substantial factor" that contributed to the avoidance or deferral of a MECO rate filing during the period 2003 through mid-2006. If none, please so state.
- b. Please provide a quantification of each "substantial factor" identified in response to part (a) above.
- c. For each "substantial factor" identified in response to parts (a) and (b) above, please identify any related items MECO has proposed to include in rate base in the pending rate case. If none, please so state.

**MECO Response:**

- a. As indicated in MECO's response to part a of CA-IR-171, financial planning (which includes the possible filing of a rate case application to increase revenues) involves consideration of all factors that affect revenue requirements, just as rate cases consider all factors that affect revenue requirements. Because consideration is collectively given to all factors that affect revenue requirements, the Company does not from year to year specifically identify and quantify the extent to which each factor, if any, contributes to the avoidance or deferral of a rate increase application. Having said that, the Company does

indicate, in its response to CA-IR-171, that the primary reason MECO was able to avoid a rate increase application in years subsequent to 2002 despite increases in the NPPC was increased sales.

- b. Not applicable.
- c. Not applicable.

CA-IR-256

**Ref: MECO Response to CA-IR-163 (Pension Asset).**

In response to part (f) of CA-IR-163, MECO T-9 states, in part:

MECO has not implemented, including with respect to the 2002 DSM earnings cap adjustment addressed in part c above, any reductions to cost tracking mechanisms designed to flow negative pension costs back to ratepayers.

This statement is unclear. Please provide the following:

- a. Please confirm that the above statement is intended to convey that the 2002 earnings cap adjustment (i.e., reduction) to the recoverable amount of DSM shareholder incentives was not specifically designed or intended to solely flow any portion of the 2002 negative NPPC through to ratepayers. If this cannot be confirmed, please explain.
- b. Please confirm that the 2002 negative NPPC materially contributed to the 2002 earnings cap adjustment which did reduce the recoverable amount of DSM shareholder incentives collected from ratepayers. If this cannot be confirmed, please explain.
- c. Please confirm that, absent the 2002 negative NPPC, there would have been no 2002 earnings cap adjustment (i.e., reduction) to the recoverable amount of DSM shareholder incentives collected from ratepayers. If this cannot be confirmed, please explain.

**MECO Response:**

- a. Yes. As indicated in MECO's response to part d of CA-IR-163, which includes the following quote from the Commission's Order No. 19093, filed on November 30, 2001, in Docket Nos. 95-0173, 95-0174, 95-0175, and 95-0176, "...if MECO exceeds its current authorized rate of return of 8.83 percent on its average rate base determined in its last rate case in 1999, as a result of its recovery of lost margin and shareholder incentives, MECO shall refund the amount by which its rate of return on average rate base exceeds 8.83 percent." In quoting the statement above, MECO's intent was to convey that the 2002 earnings cap adjustment to the recoverable amount of DSM shareholder incentives was not

designed or intended to flow any portion of the 2002 negative NPPC through to ratepayers. Rather, the 2002 earnings cap adjustment was made to comply with the requirements of the Commission's Order No. 19093, which requirements resulted in the refund of a certain amount of DSM shareholder incentives for 2002.

- b. If it is assumed that all other things are equal, one could perhaps take the position that the large negative NPPC accrual in 2002 reduced the recoverable amount of DSM shareholder incentives collected from ratepayers. If the 2002 NPPC accrual had been a smaller negative amount or a positive amount, then the recoverable amount of DSM shareholder incentives collected from ratepayers would have been larger, again, assuming that all other things are equal. However, because MECO's 2002 rate of return on average rate base calculation, prior to the DSM earnings cap adjustment, included all of the components of operating income and rate base, it is not meaningful to attempt to attribute all or a portion of the DSM earnings cap adjustment to a single component item of revenue, expense, or rate base.
- c. The Consumer Advocate's statement cannot be confirmed for the reasons explained in the response to part b. of this information request.

CA-IR-257

**Ref: MECO Response to CA-IR-164 (FAS158 Pension Accounting).**

In response to part (a) of CA-IR-164, MECO stated in part: "MECO is proposing ratemaking adjustments to reverse the AOCI charges to equity and to include a pension asset and OPEB amount in rate case, as described in MECO T-9." CA-IR-164(b) was intended to obtain both descriptions and amounts associated with the impact of FAS158 on the 2007 test year forecast, including MECO's proposed ratemaking adjustments. Please provide the following:

- a. Please provide a descriptive listing and amount of each ratemaking adjustment MECO has included in the 2007 test year forecast directly attributable to FAS158.
- b. Referring to the response to part (a) above, please identify each listed ratemaking adjustment that MECO would have proposed in the absence of FAS158.

**MECO Response:**

- a. The ratemaking adjustments that MECO has included in its test year 2007 estimates that are attributable to SFAS No. 158 are the adjustments to restore book equity for the pension and OPEB AOCI charges in determining the equity balance for ratemaking purposes, which is discussed by Ms. Tayne Sekimura in MECO T-17, page 31, beginning at line 20. The adjustment amounts are shown in MECO-1706.
- b. The ratemaking adjustments described in MECO's response to part a above, shown in MECO-1706, are adjustments to restore book equity for the pension and OPEB AOCI charges required under SFAS No. 158.

With respect to MECO's pension plan, in the absence of SFAS No. 158, the funded status of the Company's pension plan would have been determined under the provisions of SFAS No. 87, which requires comparison of the plan's market value and pension obligation, as measured by the accumulated benefit obligation (ABO), as of the balance sheet date. As of January 1, 2007, the beginning of the test year, no AOCI charge to MECO's equity would

have been required in the absence of SFAS No. 158 because the market value of the qualified plan assets exceeded the estimated ABO at December 31, 2006. Similarly, it is projected (at the time of this response) that as of December 31, 2007, the end of the test year, the market value of the qualified plan assets will exceed the ABO. As a result, because no AOCI charges are projected for either the beginning or end of 2007 balances, in the absence of SFAS No. 158, no ratemaking adjustments to restore book equity would have been required to the Company's test year estimate for rate base.

With respect to MECO's OPEB plan, as discussed in MECO T-9 page 87 beginning on line 16, unlike the minimum pension liability recognition requirement under SFAS No. 87, there is no requirement to recognize a minimum OPEB liability under SFAS No. 106. Therefore, prior to SFAS No. 158, there was no requirement to record AOCI with respect to the Company's OPEB plan. As a result, in the absence of SFAS No. 158, no ratemaking adjustments to restore book equity for OPEB related AOCI charges would have been required to the Company's test year estimate for rate base.



CA-IR-258

**Ref: MECO Response to CA-IR-170 (Pension Asset).**

In response to part (a) of CA-IR-170, MECO stated in part: "Specific utility rates and charges established by the Commission may not be cost-based. For public policy or other reasons, the Commission has in the past approved utility rates and charges that were not cost-based." The intent of this excerpt is unclear. Please provide the following:

- a. Please define the phrase "cost-based rates" as used by MECO in responding to CA-IR-170.
- b. Is it the Company's opinion and belief that the HPUC intentionally approved rates and charges for MECO in prior the rate cases that were insufficient, in the aggregate, to cover MECO's forecasted cost of providing utility service, as found just and reasonable by the Commission?
  1. If so, please provide a detailed explanation including examples of alleged deficiencies in prior rate orders.
  2. Referring to the response to part (b)(1) above, please explain whether the Company appealed each finding that MECO considered to be deficient in providing adequate cost recovery and describe the current status of each such appeal. If none, please so state.
- c. Was it the Company's intent to indicate that the specific rates and charges approved by the HPUC in prior MECO rate cases may have been insufficient to cover the direct and allocated costs for a particular customer class (i.e., vis-à-vis a detailed class cost of service study) but that the overall rates and charges were, in the aggregate, adequate to cover the cost of providing utility service, as found just and reasonable by the Commission? Please explain.

**MECO Response:**

- a. In MECO's response to part a of CA-IR-170, the term "cost-based rates" was intended to mean rates which are based on normalized costs (or cost estimates), including the cost of capital, for a test period.
- b. No. It is not the Company's opinion or belief that the Commission intentionally approved rates and charges for MECO in prior rate cases that were insufficient, in the aggregate, to

cover MECO's forecasted cost of providing utility service, as found just and reasonable by the Commission. MECO's intent in its response to CA-IR-170 was to indicate that the Commission, for public policy or other reasons, may approve specific utility rates and charges that are based on factors other than or in addition to normalized costs (or cost estimates), including the cost of capital, for a test period. MECO's present rates, approved by the Commission in amended Decision and Order No. 16922 (April 6, 1999), are an example of this. On page 57 of amended Decision and Order No. 16922, the Commission stated, "Generally, rate increases should be based on the revenue requirements of each division. However, in Decision and Order No. 13429, filed on August 5, 1994, in Docket No. 7000, the commission accepted MECO's departure from the "full cost" method by allowing the Maui Division to subsidize the Lanai and Molokai Divisions, and agreed that the impact of the shift on the Maui Division was minimal. Accordingly, for purposes of this docket, it is reasonable to depart from the "full cost" methodology to avoid too large a rate impact on Lanai and Molokai customers."

- c. Please see response to part b. of this information request.

CA-IR-259

**Ref: MECO Response to CA-IR-171 (Pension Asset).**

In response to part (c) of CA-IR-171, MECO stated in part: "In establishing MECO's rates in a rate case, the Commission normally considers all revenue, expense, rate base and capital components for a test period as determined in a rate case. However, there may be instances when certain revenues, expenses and/or rate base items are excluded from the test year and thus are not considered in the establishment of the utility's rates in a rate case proceeding, and recovery of such costs are considered outside of a rate case proceeding." Please provide the following:

- a. With regard to the above excerpt, is it the Company's intent to indicate that the Commission had improperly failed, in certain instances, to consider all relevant revenues, expenses, rate base and capital components in past MECO rate cases which resulted in MECO's inability to earn sufficient revenues to cover the cost of providing utility service? Please explain.
- b. If the response to part (a) above is affirmative, please provide a detailed explanation including examples of alleged deficiencies in prior rate orders.
- c. Referring to the response to part (b) above, please explain whether the Company appealed each finding that MECO considered to be deficient in providing adequate cost recovery and describe the current status of each such appeal. If none, please so state.

**MECO Response:**

- a. No. The intent of MECO's response to part c of CA-IR-171 is not to indicate that the Commission had improperly failed to consider all relevant revenues, expenses, rate base and capital components in past MECO rate cases which resulted in MECO's inability to earn sufficient revenues to cover the cost of providing utility service. Rather, the intent of MECO's response to part c of CA-IR-171 is to indicate that there may be instances where certain revenues, expenses and/or rate base items are excluded from the test year and thus are not considered in the establishment of the utility's rates in a rate case proceeding, and the recovery of such costs are considered outside of a rate case

proceeding. The Commission also establishes certain utility rates outside of rate case proceedings.

- b. Not applicable.
- c. Not applicable.

CA-IR-260

**Ref: Response to CA-IR-180, page 2 of 4 (Section 199 Deduction).**

The Company's response includes allocations of certain income statement expenses to "generation" to calculate QPAI income. Please provide the following information:

- a. Explain the rationale for allocating customer accounts, customer service, A&G and Miscellaneous expenses based upon relative revenue for Production Sales / Electric Sales.
- b. In your response to part (a) of this information request, explain why the "electric sales revenue" denominator in footnote 2 should be reduced by purchased power.
- c. State whether any allocation of customer accounts, customer service, A&G and miscellaneous expenses has been or will be reflected in actual filed tax returns for MECO operations, using the method shown in this IR response; or explain alternative positions that may be taken with the Internal Revenue Service.
- d. Explain why different allocation approaches are used in the company's embedded cost of service studies for customer accounts, customer service, A&G and Miscellaneous expenses in contrast to this revenue-based allocation for QPAI calculations.

**MECO Response:**

- a. The general rule under IRC §199(c)(1) (see page 4 of this response) states that qualified production activities income (QPAI) means the excess of domestic production gross receipts (DPGR) over the cost of goods sold (CGS) allocable to such receipts and other expenses, losses or deductions properly allocable to such receipts. IRC §199(c)(2) (see page 4 of this response) further provides that "The Secretary shall prescribe rules for the proper allocation of items.... Such rules shall provide for the proper allocation of items whether or not such items are directly allocable to domestic production gross receipts."

Under Regulation §1.199-4(c)(1) (see page 4 of this response), it states, "In determining its QPAI, a taxpayer must subtract from its DPGR, in addition to its CGS allocable to DPGR, the deductions that are properly allocable to DPGR. A taxpayer generally must allocate and apportion these deductions using the rules of the section 861 method." More specifically, Proposed Regulation §1.861-8T(b)(3) (see page 5 of this

response) provides that deductions which are supportive in nature (such as overhead, general and administrative and supervisory expenses) may be allocated to the deductions to which they relate or an equally acceptable method would be to attribute supportive deductions on some reasonable basis directly to the activities generating QPAI.

Customer accounts expense and customer service expenses are supportive functions to production activity and these expenses are reasonably allocated to DPGR based on relative gross revenue.

- b. Treas. Reg. §1.199-3(a)(1)(iii) (see page 6 of this response) includes receipts from the production of electricity as domestic production gross receipts (DPGR) if electricity is produced by the taxpayer in the United States. In order for electricity revenues to be classified as DPGR, production must be "by the taxpayer." Thus, revenues associated with purchased power are classified as "non-DPGR" and excluded from gross production revenues as the Company purchases the electricity and does not "produce it." Treas. Reg. §1.199-3(l)(5) (see page 8 of this response) provides an example of the classification of purchased power revenue as non-DPGR revenue. The purchased power revenues (grossed up) are excluded from total gross receipts for consistency with this exclusion.
- c. In the Company's 2005 return, no IRC §199 deduction was taken, based on our calculation which allocated all expenses, including customer accounts, customer service and A&G expenses.

The Company has not yet filed its 2006 federal and state income tax returns and the Company is awaiting further guidance with regard to the allocation of deductions. However, pursuant to Proposed Treas. Reg. §1.861-8T(b)(3), it is expected that the Company will be

required to allocate expenses that are supportive in function to production activity in its determination of QPAI.

- d. The rationale and rules for cost of service studies differ from those for IRC §199 allocation purposes.

The cost of service study attempts to allocate costs to different classes of customers based on the type of customer and how they consume electricity. This study distinguishes customer account and other support costs from generation, transmission and distribution because the allocation methodology to each customer class is different.

On the other hand, the tax rules focus on the activities producing the revenue from generation and delivery of electricity. Customer costs and other support costs are an integral part of recovering revenues for generating and delivering electricity, and the tax rules impose an allocation requirement for both direct and indirect costs. Consequently, we have allocated these indirect costs to generation and delivery activities.

**IRC §199(c)(1) and (2)**

(c) Qualified production activities income. For purposes of this section —

(1) *In general.* The term “qualified production activities income” for any taxable year means an amount equal to the excess (if any) of—

(A) the taxpayer's domestic production gross receipts for such taxable year, over

(B) the sum of—

(i) the cost of goods sold that are allocable to such receipts, and

(ii) other expenses, losses, or deductions (other than the deduction allowed under this section ), which are properly allocable to such receipts.

(2) Allocation method.

The Secretary shall prescribe rules for the proper allocation of items described in paragraph (1) for purposes of determining qualified production activities income. Such rules shall provide for the proper allocation of items whether or not such items are directly allocable to domestic production gross receipts.

**Treas. Reg. §1.199-4(c)(1)**

c) Other deductions properly allocable to domestic production gross receipts or gross income attributable to domestic production gross receipts.

(1) *In general.* In determining its QPAI, a taxpayer must subtract from its DPGR, in addition to its CGS allocable to DPGR, the deductions that are properly allocable to DPGR. A taxpayer generally must allocate and apportion these deductions using the rules of the section 861 method. In lieu of the section 861 method, certain taxpayers may apportion these deductions using the simplified deduction method provided in paragraph (e) of this section. Paragraph (f) of this section provides a small business simplified overall method that may be used by a qualifying small taxpayer, as defined in that paragraph. A taxpayer using the simplified deduction method or the small business simplified overall method must use that method for all deductions. A taxpayer eligible to use the small business simplified overall method may choose at any time for any taxable year to use the small business simplified overall method, the simplified deduction method, or the section 861 method for a taxable year. A taxpayer eligible to use the simplified deduction method may choose at any time for any taxable year to use the simplified deduction method or the section 861 method for a taxable year.



**Proposed Treas. Reg. § 1.861-8T(b)(3)**

(b) Allocation.

(3) *Supportive functions.* Deductions which are supportive in nature (such as overhead, general and administrative, and supervisory expenses) may relate to other deductions which can more readily be allocated to gross income. In such instance, such supportive deductions may be allocated and apportioned along with the deductions to which they relate. On the other hand, it would be equally acceptable to attribute supportive deductions on some reasonable basis directly to activities or property which generate, have generated or could reasonably be expected to generate gross income. This would ordinarily be accomplished by allocating the supportive expenses to all gross income or to another broad class of gross income and apportioning the expenses in accordance with paragraph (c)(1) of this section. For this purpose, reasonable departmental overhead rates may be utilized. For examples of the application of the principles of this paragraph (b)(3) to expenses other than expenses attributable to stewardship activities, see Examples 19 through 21 of paragraph (g) of this section. See paragraph (e)(4)(ii) of this section for the allocation and apportionment of deductions attributable to stewardship expenses. However, supportive deductions that are described in § 1.861-14T(e)(3) shall be allocated and apportioned in accordance with the rules of § 1.861-14T and shall not be allocated and apportioned by reference only to the gross income of a single member of an affiliated group of corporations as defined in § 1.861-14T(d).

**Treas. Reg. §1.199-3(a)**

(a) In general. The provisions of this section apply solely for purposes of section 199 of the Internal Revenue Code (Code). Domestic production gross receipts (DPGR) are the gross receipts (as defined in paragraph (c) of this section) of the taxpayer that are—

(1) Derived from any lease, rental, license, sale, exchange, or other disposition (as defined in paragraph (i) of this section) of—

(i) Qualifying production property (QPP) (as defined in paragraph (j)(1) of this section) that is manufactured, produced, grown, or extracted (MPGE) (as defined in paragraph (e) of this section) by the taxpayer (as defined in paragraph (f) of this section) in whole or in significant part (as defined in paragraph (g) of this section) within the United States (as defined in paragraph (h) of this section);

(ii) Any qualified film (as defined in paragraph (k) of this section) produced by the taxpayer; or

(iii) Electricity, natural gas, or potable water (as defined in paragraph (l) of this section) (collectively, utilities) produced by the taxpayer in the United States;

(2) Derived from, in the case of a taxpayer engaged in the active conduct of a construction trade or business, construction of real property (as defined in paragraph (m) of this section) performed in the United States by the taxpayer in the ordinary course of such trade or business; or

(3) Derived from, in the case of a taxpayer engaged in the active conduct of an engineering or architectural services trade or business, engineering or architectural services (as defined in paragraph (n) of this section) performed in the United States by the taxpayer in the ordinary course of such trade or business with respect to the construction of real property in the United States.

**Treas. Reg. §1.199-3(l)**

(l) Electricity, natural gas, or potable water.

(1) *In general.* DPGR include gross receipts derived from any lease, rental, license, sale, exchange, or other disposition of utilities produced by the taxpayer in the United States if all other requirements of this section are met. In the case of an integrated producer that both produces and delivers utilities, see paragraph (l)(4) of this section that describes certain gross receipts that do not qualify as DPGR.

(2) *Natural gas.* The term natural gas includes only natural gas extracted from a natural deposit and does not include, for example, methane gas extracted from a landfill. In the case of natural gas, production activities include all activities involved in extracting natural gas from the ground and processing the gas into pipeline quality gas.

(3) *Potable water.* The term potable water means unbottled drinking water. In the case of potable water, production activities include the acquisition, collection, and storage of raw water (untreated water), transportation of raw water to a water treatment facility, and treatment of raw water at such a facility. Gross receipts attributable to any of these activities are included in DPGR if all other requirements of this section are met.

(4) *Exceptions.*

(i) Electricity. Gross receipts attributable to the transmission of electricity from the generating facility to a point of local distribution and gross receipts attributable to the distribution of electricity to customers are non-DPGR.

(ii) Natural gas. Gross receipts attributable to the transmission of pipeline quality gas from a natural gas field (or, if treatment at a natural gas processing plant is necessary to produce pipeline quality gas, from a natural gas processing plant) to a local distribution company's citygate (or to another customer) are non-DPGR. Likewise, gross receipts of a local gas distribution company attributable to distribution from the citygate to the local customers are non-DPGR.

(iii) Potable water. Gross receipts attributable to the storage of potable water after completion of treatment of the potable water, as well as gross receipts attributable to the transmission and distribution of potable water, are non-DPGR.

(iv) De minimis exception.

(A) DPGR. Notwithstanding paragraphs (l)(4)(i), (ii), and (iii) of this section, if less than 5 percent of a taxpayer's gross receipts derived from a sale, exchange, or other disposition of utilities are attributable to the transmission or distribution of the utilities and the storage of portable water after completion of treatment of the potable water, then the gross receipts derived from the lease, rental, license, sale, exchange, or other disposition of the utilities that are attributable to the transmission and distribution of the utilities and the storage of portable water after

completion of treatment of the potable water may be treated as being DPGR (assuming all other requirements of this section are met). In the case of gross receipts derived from the lease, rental, license, sale, exchange, or other disposition of utilities that are received over a period of time (for example, a multi-year lease or installment sale), this de minimis exception is applied by taking into account the total gross receipts for the entire period derived (and to be derived) from the lease, rental, license, sale, exchange, or other disposition of the utilities. For purposes of the preceding sentence, if a taxpayer treats gross receipts as DPGR under this de minimis exception, then the taxpayer must treat the gross receipts recognized in each taxable year consistently as DPGR.

(B) Non-DPGR. If less than 5 percent of a taxpayer's gross receipts derived from a sale, exchange, or other disposition of utilities are DPGR, then the gross receipts derived from the sale, exchange, or other disposition of the utilities may be treated as non-DPGR. In the case of gross receipts derived from the lease, rental, license, sale, exchange, or other disposition of utilities that are received over a period of time (for example, a multiyear lease or installment sale), this de minimis exception is applied by taking into account the total gross receipts for the entire period derived (and to be derived) from the lease, rental, license, sale, exchange, or other disposition of the utilities. For purposes of the preceding sentence, if a taxpayer treats gross receipts as non-DPGR under this de minimis exception, then the taxpayer must treat the gross receipts recognized in each taxable year consistently as non-DPGR.

(5) *Example.* The following example illustrates the application of this paragraph (1):

*Example.* X owns a wind turbine in the United States that generates electricity and Y owns a high voltage transmission line that passes near X's wind turbine and ends near the system of local distribution lines of Z. X sells the electricity produced at the wind turbine to Z and contracts with Y to transmit the electricity produced at the wind turbine to Z who sells the electricity to customers using Z's distribution network. The gross receipts received by X from the sale of electricity produced at the wind turbine are DPGR. The gross receipts of Y derived from transporting X's electricity to Z are non-DPGR under paragraph (1)(4)(i) of this section. Likewise, the gross receipts of Z derived from distributing the electricity are non-DPGR under paragraph (1)(4)(i) of this section. If X made direct sales of electricity to customers in Z's service area and Z receives remuneration for the distribution of electricity, the gross receipts of Z are non-DPGR under paragraph (1)(4)(i) of this section. If X, Y, and Z are related persons (as defined in paragraph (b) of this section), then X, Y, and Z must allocate gross receipts among the production activities (that are DPGR), and the transmission and distribution activities (that are non-DPGR).

CA-IR-261

**Ref: MECO-WP-1301: Response to CA-IR-177 (SUTA Contribution Rate/Base).**

According to the response, the test year SUTA expense should be reduced to reflect actual 2007 contribution rates of .21 percent in place of the estimated .61 percent, with a slightly lower wage base of \$35,300 per employee rather than \$35,700. Please provide the following information:

- a. Confirm that MECO would revise the calculations at the bottom of MECO-WP-1301, page 3 to reflect the updated actual rate and base or explain any further changes that may be needed.
- b. Provide source documentation for the table showing "Allocation of Payroll Taxes Based on Labor Dollars Charged" at WP-1301, page 2.
- c. Explain whether any revisions to the data in your response to part (b) of this information request is required and provide calculations of any such revisions.

**MECO Response:**

- a. Yes, MECO will revise its calculations to reflect the reduction in SUTA rate in the June 2007 Update to MECO T-13.
- b. The requested information was previously provided in response to CA-IR-178, except as noted in c. below.
- c. Revision to the source data is also required to reflect the reclassification of \$202,000 in DSM labor costs from Other Labor to O&M expense as discussed by Ms. Suzuki in the June 2007 Update to MECO T-8. However, the DSM reclassification will not significantly impact the allocation of labor costs and the overall effect of this reclassification and the reduction in the SUTA rate will be a reduction in payroll taxes charged to operations of \$16,000. This revision will be included in the June 2007 Update to MECO T-13.

CA-IR-262

**Ref: MECO T-18, page 9, line 1 - (Customer Costs).**

At page 9, Mr. Young states that distribution lines and transformers are, "...assigned to demand and customer components, since the size and costs of these facilities are dependent not only on the customers' load, but also on the type and location of the customers." Please provide the following:

- a. Copies of all studies, workpapers, analyses and other information relied upon to formulate this opinion with respect to the MECO system.
- b. Explain which (if any) cost of service allocation factors employed by MECO provide for recognition of the "location of customers."
- c. Describe how distribution lines and transformers are configured to serve a high-rise residential condominium in contrast to a single-family subdivision and explain whether or not the Company's customer allocation factors applied to the customer component of distribution plant costs recognizes such differences.
- d. Please explain whether any weighting adjustments to the residential customer counts are employed by MECO in its embedded cost allocations to recognize differences in customer density, such as large numbers of residential customers in high-rise condominium projects in contrast to single-family homes in rural locations.

**MECO Response:**

- a. There are no additional studies, workpapers, or analyses relied upon for this position.
- b. The cost of service allocation factors in the MECO cost of service study do not make adjustments for location of customers. This would complicate the cost allocation process since it would require making cost allocations in a greater number of groups than the number of rate classes, and would require development of a basis to group customers by location.
- c. Generally speaking, a single distribution line and transformer can serve a high-rise residential condominium, while a greater quantity of distribution lines and transformers are needed to serve a single-family subdivision. The Company's customer allocation factors applied to the customer component of distribution plant costs recognize differences in the number of

customers and the allocation to rate schedules, including whether a high-rise residential condominium is master-metered (which is a single commercial customer) or whether the same condominium has individually metered units (which is many residential customers).

The customer allocation factors are not intended to adjust the cost to serve; rather, they are intended to allocate the cost of service across rate schedules.

- d. There are no weighting adjustments to the residential customer counts employed by MECO in its embedded cost allocations to recognize differences in customer density. In fact, as indicated in the response to part c. above, a high-rise condominium project that is master metered is not even included in the residential customer count but is instead counted as a single commercial customer.

CA-IR-263

**Ref: MECO T-18, page 15 (Schedule R Residential Service).**

Please explain the customer billing impacts of conversions from master metered to individually metered service for multi-family residential buildings, including the following information:

- a. Identify the rate schedules used to bill typical master metered multi-family building, with statistics indicating how many multi-family dwelling units are presently thought to be served under each MECO commercial rate schedule.
- b. Provide quantification of illustrative typical individual residential customer billing impacts for their dwelling unit upon conversion to individual metering.
- c. Explain how the Schedule R Apartment House Collection Arrangement impacts the comparisons of bill impacts in your response to part (b).
- d. Has the Company considered the implications of limiting master metering of multi-family buildings to encourage residential customer conservation measures?

**MECO Response:**

- a. Based on an analysis of billing system names and business structure codes, the Company estimates the following number of master metered multi-family electric service accounts: 29 on Schedule J, 1 on Schedule H, and 7 on Schedule P.
- b. MECO does not have the information to make this calculation. The quantification of billing impact depends on how much electricity is typically used and how much the resident is charged for that electricity through the utility cost apportionment method used.
- c. If the Schedule R Apartment House Collection provision applies, the bill impact will be less. However, as indicated in the response to part b. above, the Company is unable to calculate that bill impact.
- d. The Company has not undertaken any studies or investigations on limiting master metering of multi-family buildings to encourage residential customer conservation measures.



CA-IR-264

**Ref: MECO T-18, page 15, line 22 - (Inclining Block Rates).**

At page 15, Mr. Young states, "The merits on an inclining block rate design include mitigation of rate impact on the smallest users of the system, pricing signals that encourage conservation, and assignment of a greater share of the cost increase to the larger users." Please provide the following information:

- a. Explain whether or not Mr. Young believes that any of these "merits" would also justify adopting an inclining block rate for Schedule G customers.
- b. Explain whether or not Mr. Young believes that any of these "merits" would also justify flattening the declining block energy rates within Schedule J or Schedule P and/or implementing inclining block rates to such customers.
- c. To what extent does Mr. Young believes that any of these "merits" would justify flattening the Schedule P demand charges and/or adopting an inclining block Schedule P demand charge.
- d. Are inclining block or declining block energy rates more consistent with MECO's calculated marginal cost of service?

**MECO Response:**

- a. While pricing signals that encourage conservation support the adoption of inclining block rates for Schedule G customers, that merit alone does not justify an inclining block rate design. The other two referenced merits, mitigation of rate impact on the smallest users of the system and assignment of a greater share of the cost increase to the larger users, are more difficult to establish in Schedule G because customers can and do have multiple Schedule G accounts. For example, it is unclear that mitigating the bill impact of rate increases on the smallest Schedule G customers is perceived equivalently by a customer that has one small Schedule G account and a customer that has many Schedule G accounts.
- b. No, none of these "merits" would also justify flattening the declining energy rates within Schedule J or Schedule P and/or implementing inclining energy rates to such customers.

It is not clear that flattening the declining energy rates and/or implementing inclining energy rates in Schedules J and P will encourage conservation because the energy rates in Schedules J and P are based on the customer's billing load factor (ratio of kWh to billed kW) and not on the customer's absolute level of energy usage. Because the energy rates are based on customer billing load factor, it is unclear how to adjust those energy rates to benefit the smallest users of the system while charging relatively more to the largest users.

- c. While pricing signals that encourage conservation support the adoption of inclining demand rates for Schedule P customers, that merit alone does not justify an inclining demand charge rate design. Again, because energy charges are based on customer billing load factor, it is unclear whether flattening or inclining Schedule P demand charges will mitigate the impact on the smallest Schedule P users while assigning a greater share of the cost to the largest users. The largest user of kW is not necessarily a large user of kWh, and vice versa.
- d. No. The rate schedule energy rates are designed to recover, in part, the Company's total revenue requirement or total cost of service, not the Company's marginal cost of service.

CA-IR-265

**Ref: MECO T-18, page 34, (Green Pricing Program).**

According to Mr. Young's testimony, "The voluntary contributions received from this Green Pricing Program have been used for such programs as the Sun Power for Schools Pilot Program which funds the installation of photovoltaic systems in public schools." Please provide a summary of customer participation and contribution rates for the past three calendar years and explain how and where an accounting for such contributions is reflected in the Company's rate filing.

**MECO Response:**

Below is a summary of customer participation and contributions for 2004, 2005 and 2006. The customer contributions are actual billed Community Sun Power for Schools Pledges.

Year	No. of Contributing Customers	Billed Pledges
2004	582	\$14,025
2005	605	\$1,736
2006	636	\$8,273

The contributions are treated as offsets to research and development expenses, which are shown on MECO-918. The contributions are initially recorded as a liability account (NARUC Account No. 242). On an annual basis, MECO's Accounting Department records a journal entry to reduce the liability account and to credit or offset research and development expenses associated with Sun Power for Schools installations.

The test year 2007 estimate for the Sun Power for Schools program is \$95,900, as shown in MECO-918. The test year estimate amount of \$95,900 inadvertently failed to include a credit or offset for estimated voluntary contributions expected to be received in the test year. Based on a 3-year average of the billed pledges for 2004 through 2006 shown above, a correction to decrease the test year 2007 estimate for the Sun Power for Schools program by \$8,000 would be required to properly include the credit or offset for estimated voluntary contributions expected to be received in the test year.

CA-IR-266

**Ref: MECO T-18, page 35 (TOU Rate Availability).**

Please provide the following information regarding MECO provision of time-of-use rates in compliance with EPACT 2005:

- a. Explain whether/how MECO believes that its present customer limitation proposed for TOU rates is consistent with the requirements of the EPACT.
- b. What is MECO's plan with respect to the timing for removing or changing the customer number limitations upon TOU rates that are offered?
- c. Has the Company prepared any reports or analyses of customer participation rates and customer impacts associated with pilot or test programs involving TOU rates?
- d. If your response to part (c) of this information request is affirmative, please provide copies of such reports/analyses (or citation if filed with the Commission).

**MECO Response:**

- a. By having the customer limitation for the proposed TOU rates, MECO would be able to offer the proposed TOU rates to customers since it currently requires a significant amount of resources to manually bill and process TOU accounts. Without the limitation, MECO would not be able to offer the proposed TOU rates until the new Customer Information System is in place. MECO plans to remove the customer number limitations when the new Customer Information System is in place. The new system will be able to automatically generate a bill based on TOU rates.
- b. See the response in part a. above.
- c. No, the Company has not employed any test or pilot programs involving TOU rates.  
  
However, the preliminary results of a residential TOU pilot program at HECO are presented and discussed in HECO T-22 in Docket No. 04-0113.
- d. See the response in part c. above.

CA-IR-267

**Ref: MECO T-18, page 44 (Standby Service).**

Please provide the following information regarding the Company's rate case proposed Standby Service rates:

- a. Provide a markup of any revisions to the MECO proposed Standby Tariff that is now being proposed in Docket No. 2006-0497.
- b. Recognizing that MECO's present and proposed sales rates do not have demand rates equal to calculated unit demand costs, please explain any further adjustments to the Company's proposed Standby pricing for supplemental service pricing that would be required if the Commission wished to achieve approximate parity with the level of demand charges proposed to be recovered within the corresponding general sales rate?
- c. Identify and describe any other adjustments that may be required to the MECO-proposed Standby rate levels in the interest of moderating any adverse bill impacts associated with customer billing demand changes arising from self generation and adoption of standby service pricing.

**MECO Response:**

- a. Proposed revisions to the MECO proposed standby tariff were submitted to the Commission on August 31, 2007 in Docket No. 2006-0497.
- b. The Company's proposed standby tariff does not propose different demand charge rates for supplemental service. The Company's proposal does use a separate definition for supplemental service kW in order that standby service kW and supplemental service kW are billed separately and kW used is not billed twice. However, supplemental service kW is billed at the underlying regular rate schedule (Schedule J or Schedule P) rates.
- c. The Company's proposed adjustment to the definition of supplemental service billing kW, in order to avoid billing a kW in both standby service rates and supplemental service rates, was filed with the Commission on August 31, 2007, as described in the response to part a. above.

CA-IR-268

**Ref: MECO-WP-1802, (Embedded Cost of Service Model).**

Please provide complete copies of the load study data used to develop demand and energy allocation factors for the test year in the cost of service models for each Division.

**MECO Response:**

A copy of MECO's 2005 Class Load Study is provided in the attachments to this response.

- Attachment 1 – Maui Division
- Attachment 2 – Molokai Division
- Attachment 3 – Lanai Division

The requested information is voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. Electronic copies of the attachments are being provided.

CA-IR-269

**Ref: MECO-WP-1802 ( Plant Functionalization Data).**

Please provide complete copies of the Minimum System studies, Zero Intercept Studies and other supporting documentation for the input values at "LINEDATA" in the cost of service models for each Division.

**MECO Response:**

Copies of the minimum system and zero intercept studies are provided in MECO's response to CA-IR-196. The other input data from the "LINEDATA" tab in the cost of service models are unchanged from MECO's Docket No. 97-0346; see MECO-WP-1702, pages 61, 124, and 187 (attached as pages 2-4 of this response).



MECO-WP-1702  
DOCKET NO. 97-0346  
PAGE 61

MAUI ELECTRIC COMPANY, LTD. - Maui DIVISION  
DOCKET NO. 97-0346  
DEMAND VS CUSTOMER COMPONENTS OF  
PRIMARY AND SECONDARY DISTRIBUTION LINES \*

	DISTRIB <sup>1</sup> POLES (AC 364)	OVERHEAD CONDUCTORS (AC 365)	UNDERGROUND CONDUIT (AC 366)	UNDERGROUND CONDUCTORS (AC 367)	TOTAL DISTRIB LINES	% OF TOTAL
-----						
A. PRIMARY VOLTAGE						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	43.0	65.0	19.0	40.7	
B. CUSTOMER	41.0	57.0	35.0	81.0	59.3	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. PRIMARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND	6,009.6	4,888.2	5,543.6	3,680.3	20,121.7	29.4
B. CUSTOMER	4,176.1	6,479.7	2,985.0	15,689.7	29,330.6	42.8
-----						
TOTAL PRIMARY	10,185.7	11,367.9	8,528.6	19,370.1	49,452.3	72.2
-----						
B. SECONDARY VOLTAGE:						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	69.0	65.0	60.0	63.3	
B. CUSTOMER	41.0	31.0	35.0	40.0	36.7	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. SECONDARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND	3,430.3	4,477.4	1,336.8	2,802.6	12,047.2	17.6
B. CUSTOMER	2,383.8	2,011.6	719.8	1,868.4	6,983.6	10.2
-----						
TOTAL SECONDARY	5,814.1	6,489.0	2,056.7	4,671.0	19,030.8	27.8
-----						
TOTAL PLANT BALANCE	15,999.8	17,856.9	10,585.3	24,041.1	68,483.1	100.0
-----						

\* NOTE: 1. PRIMARY VS SECONDARY BREAKDOWN BASED ON STUDY OF INSTALLED  
COSTS FROM 1980-1994

2. DEMAND VS CUSTOMER BREAKDOWN FROM MINIMUM SYSTEM STUDY BASED  
ON REPLACEMENT COSTS AS OF 12/31/95 OF INSTALLED FACILITIES FROM 1980-1994

MECO-WP-1702  
DOCKET NO. 97-0346  
PAGE 124

MAUI ELECTRIC COMPANY, LTD. - LANAI DIVISION  
DOCKET NO. 97-0346  
DEMAND VS CUSTOMER COMPONENTS OF  
PRIMARY AND SECONDARY DISTRIBUTION LINES \*

	DISTRIB POLES (AC 364)	OVERHEAD CONDUCTORS (AC 365)	UNDERGROUND CONDUIT (AC 366)	UNDERGROUND CONDUCTORS (AC 367)	TOTAL DISTRIB LINES	% OF TOTAL
-----						
A. PRIMARY VOLTAGE						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	50.0	44.0	17.0	36.9	
B. CUSTOMER	41.0	50.0	56.0	83.0	63.1	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. PRIMARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND	567.4	451.1	61.2	291.5	1,371.3	35.7
B. CUSTOMER	394.3	451.1	77.9	1,423.4	2,346.7	61.1
-----						
TOTAL PRIMARY	961.7	902.2	139.2	1,715.0	3,718.0	96.8
-----						
B. SECONDARY VOLTAGE:						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	30.0	44.0	30.0	44.2	
B. CUSTOMER	41.0	70.0	56.0	70.0	55.8	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. SECONDARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND	35.5	17.0	.2	1.9	54.6	1.4
B. CUSTOMER	24.7	39.6	.3	4.4	69.0	1.8
-----						
TOTAL SECONDARY	60.2	56.5	.5	6.3	123.6	3.2
-----						
TOTAL PLANT BALANCE	1,021.9	958.7	139.7	1,721.3	3,841.6	100.0
-----						

\* NOTE: 1. PRIMARY VS SECONDARY BREAKDOWN BASED ON STUDY OF INSTALLED  
COSTS FROM 1980-1994

2. DEMAND VS CUSTOMER BREAKDOWN FROM MINIMUM SYSTEM STUDY BASED  
ON REPLACEMENT COSTS AS OF 12/31/95 OF INSTALLED FACILITIES FROM 1980-1994

MECO-WP-1702  
DOCKET NO. 97-0346  
PAGE 187

MAUI ELECTRIC COMPANY, LTD. - MOLOKAI DIVISION  
DOCKET NO. 97-0346  
DEMAND VS CUSTOMER COMPONENTS OF  
PRIMARY AND SECONDARY DISTRIBUTION LINES \*

	DISTRIB POLES (AC 364)	OVERHEAD CONDUCTORS (AC 365)	UNDERGROUND CONDUIT (AC 366)	UNDERGROUND CONDUCTORS (AC 367)	TOTAL DISTRIB LINES	% OF TOTAL
-----						
A. PRIMARY VOLTAGE						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	43.0	44.0	19.0	19.7	
B. CUSTOMER	41.0	57.0	56.0	81.0	80.3	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. PRIMARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND			18.6	287.7	306.3	17.2
B. CUSTOMER			23.7	1,226.4	1,250.1	70.1
-----						
TOTAL PRIMARY			42.3	1,514.1	1,556.4	87.3
-----						
B. SECONDARY VOLTAGE:						
-----						
1. COMPONENT BREAKDOWN (%)						
-----						
A. DEMAND	59.0	74.0	44.0	47.0	46.9	
B. CUSTOMER	41.0	26.0	56.0	53.0	53.1	
-----						
TOTAL	100.0	100.0	100.0	100.0	100.0	
-----						
2. SECONDARY PLANT BALANCE AS OF 12/31/95 (\$000S)						
-----						
A. DEMAND			2.7	103.4	106.1	5.9
B. CUSTOMER			3.4	116.5	120.0	6.7
-----						
TOTAL SECONDARY			6.1	219.9	226.0	12.7
-----						
TOTAL PLANT BALANCE			48.4	1,734.0	1,782.4	100.0
-----						

\* NOTE: 1. PRIMARY VS SECONDARY BREAKDOWN BASED ON STUDY OF INSTALLED  
COSTS FROM 1980-1994  
2. DEMAND VS CUSTOMER BREAKDOWN FROM MINIMUM SYSTEM STUDY BASED  
ON REPLACEMENT COSTS AS OF 12/31/95 OF INSTALLED FACILITIES FROM 1980-1994

CA-IR-270

**Ref: MECO-WP-1802, (Embedded Cost of Service Model).**

Please provide complete copies in electronic and hard copy format of all supporting analyses to functionalize or allocate input data, including but not limited to rate base input elements at worksheet "RBDATA", customer weighting factors at "MEALDATA" C1 through C8 and "typical cost" data at "MECCDATA" in the cost of service models for each Division.

**MECO Response:**

The tables below provide the location of supporting analyses for the Embedded Cost of Service Model data elements by data input worksheet for each division. Pages 11 to 73 of this response are also provided in Excel spreadsheet format.

**Maui Division Cost of Service Model**

<b>Data Input Tab: MEALDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
System Peak	Page 74 of instant IR
System Load Factor	MECO-WP-404, page 1
Class Load Factor	Page 77
Average Customers	Page 80
Primary Line Wgt. Factor (C1)	Page 12
Secondary Line Wgt. Factor (C2)	Page 13
Transformer Wgt. Factor (C3)	Pages 14, 83, 84
Service Drop Factor (C4)	Pages 15, 85
Meter Wgt. Factor (C5)	Pages 16, 87, 88
Customer Account Wgt. Factor (C6)	Page 89
Bad Debt Allocation Factor (C7)	Page 92
Customer Service allocation Factor (C8)	Page 89
Street Lighting Allocation Factor (C9)	Page 89
Sales Revenue	MECO-WP-302, pgs. 1,10, 16, 109, 113, and 146 of 150
3-Phase to 1-Phase Cost Ratio (C1)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C2)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C3)	Page 14
3-Phase to 1-Phase Cost Ratio (C4)	Page 15
3-Phase to 1-Phase Cost Ratio (C5)	Page 16
3-Phase to 1-Phase Cost Ratio (C6)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C7)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C8)	No change from 97-0346 COS

<b>Data Input Tab: ENERGDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
Generator step-up loss	Page 30
Transmission Line Loss	Page 30
46kV to Primary Voltage Transformation Loss	Page 30
Primary Line Loss	Page 30
Primary to Secondary Transformation Loss	Page 30
Secondary Line Loss	Page 30
Net Generation	Page 30
Station Use	Page 30
Purchased Power	Page 30
Company Use	Page 30
Losses and Unaccounted For	Page 30
Energy Sales by rate class	MECO-WP-302, pgs. 1,10, 16, 109, 113, and 146 of 150
kWh/kWm by Rate Class	Schedule R/E & G Load factor: Class Load Study Average kWh / Average peak kW per customer. Remaining Schedules: Recorded Energy Sales / Recorded Demand Sales

<b>Data Input Tab: MECCDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
Account 902 Weighting	Page 97
Account 903 Weighting	Page 97
By Schedule, by Phase: Number of Bills	MECO-WP-302, pgs. 1,10, 16, 109, 113, and 146 of 150
By Schedule, by Phase: Customers per Transformer	Pages 20, 21
By Schedule, by Phase: Average Peak kW per Customer	Class Load Study / Rate Runs. Voluminous
By Schedule, by Phase: Transformer kVa size	Pages 83, 84
By Schedule, by Phase: Typical Cost per Transformer	Pages 83, 84
By Schedule, by Phase: Typical Service Cost	Page 85
By Schedule, by Phase: Typical Meter Cost	Pages 87, 88
Customer Accounts Weighting Factor C6	Held same as Last Rate Case (97-0346)

<b>Data Input Tab: RBDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
Gross Plant	Pages 22, 138
Depreciation Balance	Page 23, 156
Depreciation Expense	Pages 24, 156
Materials and Supplies	Page 25; MECO-WP-2001, Page 10
Property Held for Future Use	Page 25
Customer Advances	Page 25
Unamortized Net Regulatory Asset	Page 26; MECO-WP-2001, Page 10
Office Supplies	Not Used
2000 Final Dist. Inv. Adj. Basis	Not Used
Working Cash: Fuel Oil and Purchased Power	MECO-WP-2001, Page 11
Working Cash: Labour O&M	MECO-WP-2001, Page 11
Working Cash: Depreciation	Not Used
Working Cash: Income Taxes & Revenue Taxes	MECO-WP-2001, Page 11
Working Cash: Rate of Return	Not Used
Working Cash: Deferred Income Taxes	Not Used
Working Cash: Operating Cash	Not Used
Customer Deposits	MECO-WP-2001, Page 10
Deferred Income Taxes	Page 27; MECO-WP-2001, Page 10
Unamortized ITC	Page 27; MECO-WP-2001, Page 10
Amortized ITC Expense	Page 27; MECO-WP-2001, Page 14
Contribution-in-aid-of-Construction (CIAC) Beg. Bal.	Page 28

<b>Data Input Tab: LINEDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
All Data Elements	Held same as Last Rate Case (97-0346)

<b>Data Input Tab: REVTXDATA (MAUI)</b>	
<u>Data Element</u>	<u>Support</u>
Other Operating Revenue	Page 20
Increase in Other Revenue	Page 20
Revenue Increase	Page 21
Miscellaneous Revenue	MECO-WP-712, page 3
Other Tax Deductions	MECO-WP-2001, Page 12
PSC Tax	MECO-WP-2001, Page 13
PUC Fees	MECO-WP-2001, Page 13
Franchise Royalty Tax	MECO-WP-2001, Page 13
FICA Tax	MECO-WP-2001, Page 13
Income Tax	MECO-WP-2001, Page 12
Interest on Customer Deposits	MECO-WP-2001, Page 12
Change in Working Cash	MECO-WP-2001, Page 11
Uncollectibles Factor	MECO-WP-711, Page 1
Sales Tax Revenue Factor	MECO-WP-2001, Page 13
Other Revenue Tax Factor	MECO-WP-2001, Page 13
Franchise Royalty Tax Rate	MECO-WP-2001, Page 13
Income Tax Factor	MECO-WP-2001, Page 19
Operating Income Divisor	MECO-WP-2001, Page 20
Target Rate of Return	MECO-WP-2001, Page 1
Service Establishment Fee	MECO-WP-712, Page 3
Field Collection Charge	MECO-WP-712, Page 3
Late Payment Charge	MECO-WP-712, Page 3
Reconnection Charge	MECO-WP-712, Page 3
Returned Check Charge	MECO-WP-712, Page 3
Purchased Power Metering Charge	MECO-WP-712, Page 3
Schedule F Fixture Charge	MECO-WP-712, Page 3
Allocation Factors for Other Operating Revenue	Page 18, 19

Molokai Division Cost of Service Model

<b>Data Input Tab: MEALDATA (MOLOKAI)</b>	
<u>Data Element</u>	<u>Support</u>
System Peak	Page 75
System Load Factor	MECO-WP-404, pg96
Class Load Factor	Page 78
Average Customers	Page 81
Primary Line Wgt. Factor (C1)	Page 33
Secondary Line Wgt. Factor (C2)	Page 34
Transformer Wgt. Factor (C3)	Pages 35, 83, 84
Service Drop Factor (C4)	Pages 36, 85
Meter Wgt. Factor (C5)	Pages 37, 87
Customer Account Wgt. Factor (C6)	Pages 38, 89
Bad Debt Allocation Factor (C7)	Pages 38, 92
Customer Service allocation Factor (C8)	Pages 38, 89
Street Lighting Allocation Factor (C9)	Pages 38, 89
Sales Revenue	MECO-WP-304, pgs. 1, 10, 16, 25, 28, 47
3-Phase to 1-Phase Cost Ratio (C1)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C2)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C3)	Page 35
3-Phase to 1-Phase Cost Ratio (C4)	Page 36
3-Phase to 1-Phase Cost Ratio (C5)	Page 37
3-Phase to 1-Phase Cost Ratio (C6)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C7)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C8)	No change from 97-0346 COS

<b>Data Input Tab: ENERGDATA (MOLOKAI)</b>	
<u>Data Element</u>	<u>Support</u>
Generator step-up loss	Page 51
Transmission Line Loss	Page 51
46kV to Primary Voltage Transformation Loss	Page 51
Primary Line Loss	Page 51
Primary to Secondary Transformation Loss	Page 51
Secondary Line Loss	Page 51
Net Generation	Page 51
Station Use	Page 51
Purchased Power	Page 51
Company Use	Page 51
Losses and Unaccounted For	Page 51
Energy Sales by rate class	MECO-WP-303, pgs. 1,10, 16, 25, 28, and 47
kWh/kWm by Rate Class	Schedule R/E & G Load factor: Class Load Study Average kWh / Average peak kW per customer. Remaining Schedules: Recorded Energy Sales / Recorded Demand Sales



<b>Data Input Tab: MECCDATA (MOLOKAI)</b>	
<u>Data Element</u>	<u>Support</u>
Account 902 Weighting	Page 113
Account 903 Weighting	Page 113
By Schedule, by Phase: Number of Bills	MECO-WP-303, pgs. 1,10, 16, 25, 28, and 47
By Schedule, by Phase: Customers per Transformer	Pages 83, 84
By Schedule, by Phase: Average Peak kW per Customer	Class Load Study / Rate Runs. Voluminous
By Schedule, by Phase: Transformer kVa size	Pages 83, 84
By Schedule, by Phase: Typical Cost per Transformer	Pages 83, 84
By Schedule, by Phase: Typical Service Cost	Page 85
By Schedule, by Phase: Typical Meter Cost	Page 87, 88
Customer Accounts Weighting Factor C6	Held same as Last Rate Case (97-0346)

<b>Data Input Tab: RBDATA (MOLOKAI)</b>	
<u>Data Element</u>	<u>Support</u>
Gross Plant	Page 43, 140
Depreciation Balance	Pages 44, 157
Depreciation Expense	Pages 45, 157
Materials and Supplies	Page 46; MECO-WP-2001, Page 34
Property Held for Future Use	Page 46
Customer Advances	Page 46; MECO-WP-2001, Page 34
Unamortized Net Regulatory Asset	Page 47; MECO-WP-2001, Page 34
Office Supplies	Not Used
2000 Final Dist. Inv. Adj. Basis	Not Used
Working Cash: Fuel Oil and Purchased Power	Page 52; MECO-WP-2001, Page 35
Working Cash: Labour O&M	Page 52; MECO-WP-2001, Page 35
Working Cash: Depreciation	Not Used
Working Cash: Income Taxes & Revenue Taxes	Page 52; MECO-WP-2001, Page 35
Working Cash: Rate of Return	Not Used
Working Cash: Deferred Income Taxes	Not Used
Working Cash: Operating Cash	Not Used
Customer Deposits	MECO-WP-2001, Page 34
Deferred Income Taxes	Page 48; MECO-WP-2001, Page 34
Unamortized ITC	Page 48; MECO-WP-2001, Page 34
Amortized ITC Expense	Page 48; MECO-WP-2001, Page 34
Contribution-in-aid-of-Construction (CIAC) Beg. Bal.	Page 49

<b>Data Input Tab: LINEDATA (MOLOKAI)</b>	
<u>Data Element</u>	<u>Support</u>
All Data Elements	Held same as Last Rate Case (97-0346)

Data Input Tab: REVTXDATA (MOLOKAI)	
<u>Data Element</u>	<u>Support</u>
Other Operating Revenue	Page 41
Increase in Other Revenue	Page 41
Revenue Increase	Page 42
Miscellaneous Revenue	MECO-WP-712, page 7
Other Tax Deductions	MECO-WP-2001, Page 42
PSC Tax	MECO-WP-2001, Page 42
PUC Fees	MECO-WP-2001, Page 43
Franchise Royalty Tax	MECO-WP-2001, Page 43
FICA Tax	MECO-WP-2001, Page 42
Income Tax	MECO-WP-2001, Page 38
Interest on Customer Deposits	MECO-WP-2001, Page 36
Change in Working Cash	MECO-WP-2001, Page 35
Uncollectibles Factor	MECO-WP-711, Page 1
Sales Tax Revenue Factor	MECO-WP-2001, Page 37
Other Revenue Tax Factor	MECO-WP-2001, Page 37
Franchise Royalty Tax Rate	MECO-WP-2001, Page 37
Income Tax Factor	MECO-WP-2001, Page 43
Operating Income Divisor	MECO-WP-2001, Page 44
Target Rate of Return	MECO-WP-2001, Page 1 of 44
Service Establishment Fee	MECO-WP-712; Page 7
Field Collection Charge	MECO-WP-712; Page 7
Late Payment Charge	MECO-WP-712; Page 7
Reconnection Charge	MECO-WP-712; Page 7
Returned Check Charge	MECO-WP-712; Page 7
Purchased Power Metering Charge	MECO-WP-712; Page 7
Schedule F Fixture Charge	MECO-WP-712; Page 7
Allocation Factors for Other Operating Revenue	Pages 39, 40

Lanai Division Cost of Service Model

<b>Data Input Tab: MEALDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
System Peak	Page 76
System Load Factor	MECO-WP-404, page 93
Class Load Factor	Page 79
Average Customers	Page 82
Primary Line Wgt. Factor (C1)	Page 54
Secondary Line Wgt. Factor (C2)	Page 55
Transformer Wgt. Factor (C3)	Page 56, 83, 84
Service Drop Factor (C4)	Page 57, 85
Meter Wgt. Factor (C5)	Page 58, 87, 88
Customer Account Wgt. Factor (C6)	Page 59, 90
Bad Debt Allocation Factor (C7)	Page 59, 92
Customer Service allocation Factor (C8)	Page 59, 90
Street Lighting Allocation Factor (C9)	Page 59, 90
Sales Revenue	MECO-WP-303, pgs. 1, 8, 14, 23, 27, 37
3-Phase to 1-Phase Cost Ratio (C1)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C2)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C3)	Page 56
3-Phase to 1-Phase Cost Ratio (C4)	Page 57
3-Phase to 1-Phase Cost Ratio (C5)	Page 58
3-Phase to 1-Phase Cost Ratio (C6)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C7)	No change from 97-0346 COS
3-Phase to 1-Phase Cost Ratio (C8)	No change from 97-0346 COS

<b>Data Input Tab: ENERGDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
Generator step-up loss	Page 72
Transmission Line Loss	Page 72
46kV to Primary Voltage Transformation Loss	Page 72
Primary Line Loss	Page 72
Primary to Secondary Transformation Loss	Page 72
Secondary Line Loss	Page 72
Net Generation	Page 72
Station Use	Page 72
Purchased Power	Page 72
Company Use	Page 72
Losses and Unaccounted For	Page 72
Energy Sales by rate class	MECO-WP-303, pgs. 1, 8, 14, 23, 27, and 37
kWh/kWm by Rate Class	Schedule R/E & G Load factor: Class Load Study Average kWh / Average peak kW per customer. Remaining Schedules: Recorded Energy Sales / Recorded Demand Sales

<b>Data Input Tab: MECCDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
Account 902 Weighting	Page 105
Account 903 Weighting	Page 105
By Schedule, by Phase: Number of Bills	MECO-WP-303, pgs. 1,8, 14, 23, 27, and 37
By Schedule, by Phase: Customers per Transformer	Pages 83, 84
By Schedule, by Phase: Average Peak kW per Customer	Class Load Study / Rate Runs. Voluminous
By Schedule, by Phase: Transformer kVa size	Pages 83, 84
By Schedule, by Phase: Typical Cost per Transformer	Pages 83, 84
By Schedule, by Phase: Typical Service Cost	Page 85
By Schedule, by Phase: Typical Meter Cost	Pages 87, 88
Customer Accounts Weighting Factor C6	Held same as Last Rate Case (97-0346)

<b>Data Input Tab: RBDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
Gross Plant	Pages 64, 139
Depreciation Balance	Pages 65, 156
Depreciation Expense	Pages 66, 156
Materials and Supplies	Page 67; MECO-WP-2001, Page 22
Property Held for Future Use	Page 67
Customer Advances	Page 67; MECO-WP-2001, Page 22
Unamortized Net Regulatory Asset	Page 68; MECO-WP-2001, Page 22
Office Supplies	Not Used
2000 Final Dist. Inv. Adj. Basis	Not Used
Working Cash: Fuel Oil and Purchased Power	Page 73; MECO-WP-2001, Page 23
Working Cash: Labour O&M	Page 73; MECO-WP-2001, Page 23
Working Cash: Depreciation	Not Used
Working Cash: Income Taxes & Revenue Taxes	Page 73; MECO-WP-2001, Page 23
Working Cash: Rate of Return	Not Used
Working Cash: Deferred Income Taxes	Not Used
Working Cash: Operating Cash	Not Used
Customer Deposits	MECO-WP-2001, Page 22
Deferred Income Taxes	Page 69; MECO-WP-2001, Page 22
Unamortized ITC	Page 69; MECO-WP-2001, Page 22
Amortized ITC Expense	Page 69; MECO-WP-2001, Page 22
Contribution-in-aid-of-Construction (CIAC) Beg. Bal.	Page 70

<b>Data Input Tab: LINEDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
All Data Elements	Held same as Last Rate Case (97-0346)

<b>Data Input Tab: REVTXDATA (LANAI)</b>	
<u>Data Element</u>	<u>Support</u>
Other Operating Revenue	Page 62
Increase in Other Revenue	Page 62
Revenue Increase	Page 63
Miscellaneous Revenue	MECO-WP-712, page 5
Other Tax Deductions	MECO-WP-2001, Page 26
PSC Tax	MECO-WP-2001, Page 25
PUC Fees	MECO-WP-2001, Page 25
Franchise Royalty Tax	MECO-WP-2001, Page 25
FICA Tax	MECO-WP-2001, Page 30
Income Tax	MECO-WP-2001, Page 26
Interest on Customer Deposits	MECO-WP-2001, Page 24
Change in Working Cash	MECO-WP-2001, Page 23
Uncollectibles Factor	MECO-WP-711, Page 1
Sales Tax Revenue Factor	MECO-WP-2001, Page 25
Other Revenue Tax Factor	MECO-WP-2001, Page 25
Franchise Royalty Tax Rate	MECO-WP-2001, Page 25
Income Tax Factor	MECO-WP-2001, Page 31
Operating Income Divisor	MECO-WP-2001, Page 32
Target Rate of Return	MECO-WP-2001, Page 1
Service Establishment Fee	MECO-WP-712, Page 5
Field Collection Charge	MECO-WP-712, Page 5
Late Payment Charge	MECO-WP-712, Page 5
Reconnection Charge	MECO-WP-712, Page 5
Returned Check Charge	MECO-WP-712, Page 5
Purchased Power Metering Charge	MECO-WP-712, Page 5
Schedule F Fixture Charge	MECO-WP-712, Page 5
Allocation Factors for Other Operating Revenue	Pages 60, 61

Pages 11-157 are voluminous and available for inspection at HECO's Regulatory Affairs  
Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii.  
Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the documents.  
Electronic copies of the requested information are being provided.

CA-IR-271

**Ref: Rate Case Activities/Expenses.**

Please provide the following information:

- a. Identify and describe any labor or non-labor expenses in the test year that are believed to be at higher than normal levels because of the rate case filing and related regulatory support responsibilities.
- b. Provide a comparative summary of annual historical labor and non-labor charges to each of the following activities for each year 2002 through 2006 actual in comparison to test year 2007 values.
  1. 735 Rate Case Filings
  2. 736 Pricing Analyses
  3. 737 Cost Recovery Filings
  4. 738 Other PUC Filings
  5. 739 PUC Capital Project Filings

**MECO Response:**

- a. MECO's rate case estimates were prepared on a normalized test year basis such that the test year estimates represent 'normal', ongoing Company operations for the period during which the proposed rates will be in effect. The Company has included what would otherwise be considered higher than normal non-labor expenses in its \$347,500 test year estimate for Account No. 928, Regulatory Commission expense, which is shown in the updated MECO-915 which was included in the Company's June 2007 Update to MECO T-9. However, as discussed in MECO T-9, beginning on page 62, the Company is proposing to amortize the total estimated non-labor costs for this rate case over a three year period, which would result in a lower, normalized test year estimate compared to the alternative of

including in the test year estimate all of the estimated \$1,042,500 of non-labor rate case expenses identified in the updated MECO-915.

In addition, as shown on Attachment 1, page 1 of the response to part b, the amount of labor charges included in the test year estimate for activity 735, Prepare & Support Rate Case Filings, is higher than the recorded charges for each of the years from 2002 through 2006. However, because the labor charges included in the test year estimate for activity 735 were only for merit employees who would not be eligible for overtime compensation, the higher amount of labor hours included in the test year estimate for this activity would not be expected to result in a higher than normal test year estimate for overall labor expense. As discussed in MECO T-9, beginning on page 78, MECO used standard labor rates in its test year estimate for labor expense. For exempt merit employees, the higher than normal level of labor hours included in the test year estimate for activity 735 would result in a lower standard labor rate, all other things remaining unchanged, such that the overall labor expense included in the test year would not be higher than would otherwise have been the case had the number of labor hours for activity 735 been estimated at a lower level.

- b. Please see Attachment 1, pages 1 through 5, for a comparative summary of annual historical labor and non-labor O&M charges to activities 735 through 739 for each year from 2002 through 2006 actual in comparison to test year 2007 estimates.



MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 735 - PREPARE & SUPPORT RATE CASE FILINGS  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	<u>Recorded</u> <u>2002</u>	<u>Recorded</u> <u>2003</u>	<u>Recorded</u> <u>2004</u>	<u>Recorded</u> <u>2005</u>	<u>Recorded</u> <u>2006</u>	<u>Op Budget</u> <u>2007</u>	<u>Direct</u> <u>Adjust</u>	<u>June</u> <u>Update</u> <u>Adjust</u>	<u>Revised</u> <u>Test Year</u> <u>Estimate</u>
Labor	201	-	-	-	76,743	323,055	-	-	323,055
Non-Labor	-	-	-	-	149	-	-	-	-
	201	-	-	-	76,892	323,055	-	-	323,055

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 736 - PERFORM PRICING ANALYSES & DEVELOP PRICING PROPOSALS  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	Recorded <u>2002</u>	Recorded <u>2003</u>	Recorded <u>2004</u>	Recorded <u>2005</u>	Recorded <u>2006</u>	Op Budget <u>2007</u>	Direct <u>Adjust</u>	June Update <u>Adjust</u>	Revised Test Year <u>Estimate</u>
Labor	18,984	19,419	37,111	67,830	17,320	3,895	-	-	3,895
Non-Labor	49,057	33,101	16,622	28,512	114,987	41,974	-	-	41,974
	68,041	52,520	53,733	96,342	132,307	45,869	-	-	45,869

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 737 - PREPARE & SUPPORT COST RECOVERY & RATE ADJUSTMENT FILINGS  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	<u>Recorded</u> <u>2002</u>	<u>Recorded</u> <u>2003</u>	<u>Recorded</u> <u>2004</u>	<u>Recorded</u> <u>2005</u>	<u>Recorded</u> <u>2006</u>	<u>Op Budget</u> <u>2007</u>	<u>Direct</u> <u>Adjust</u>	<u>June</u> <u>Update</u> <u>Adjust</u>	<u>Revised</u> <u>Test Year</u> <u>Estimate</u>
Labor	-	-	-	-	-	-	-	-	-
Non-Labor	2,211	30,065	5,154	4,044	20,688	12,491	-	-	12,491
	<u>2,211</u>	<u>30,065</u>	<u>5,154</u>	<u>4,044</u>	<u>20,688</u>	<u>12,491</u>	<u>-</u>	<u>-</u>	<u>12,491</u>

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 738 - PREPARE & SUPPORT OTHER PUC REGULATORY FILINGS  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	Recorded <u>2002</u>	Recorded <u>2003</u>	Recorded <u>2004</u>	Recorded <u>2005</u>	Recorded <u>2006</u>	Op Budget <u>2007</u>	Direct <u>Adjust</u>	June Update <u>Adjust</u>	Revised Test Year <u>Estimate</u>
Labor	15,979	33,326	3,541	6,244	1,446	4,379	-	-	4,379
Non-Labor	27,139	83,414	84,950	92,254	94,706	128,783	-	-	128,783
	43,118	116,740	88,491	98,498	96,152	133,162	-	-	133,162

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 739 - PREPARE & SUPPORT PUC CAPITAL PROJECT FILINGS  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	Recorded <u>2002</u>	Recorded <u>2003</u>	Recorded <u>2004</u>	Recorded <u>2005</u>	Recorded <u>2006</u>	Op Budget <u>2007</u>	Direct <u>Adjust</u>	June Update <u>Adjust</u>	Revised Test Year <u>Estimate</u>
Labor	-	-	-	-	-	-	-	-	-
Non-Labor	-	3,503	1,163	209	-	1,339	-	-	1,339
	-	3,503	1,163	209	-	1,339	-	-	1,339

CA-IR-272

**Ref: Legislative/Government Relations.**

Please provide the following information:

- a. Itemize and describe all labor and non-labor expenses by RA and NARUC Account in the test year that are charged to Activity 745 – Maintain Relations with Legislators and Governmental Agencies.
- b. Describe the goals and general purpose of activities undertaken and key issues addressed in connection with the itemization of expenses provided in your response to part a of this information request.
- c. Provide a comparative summary of annual historical labor and non-labor charges to Activity 745 for each year 2002 through 2006 actual in comparison to test year 2007 values.

**MECO Response:**

- a. Please see Attachment 1 for labor and non-labor O&M expenses by RA and NARUC account in the test year charged to Activity 745 – Maintain Relations with Legislators and Governmental Agencies.
- b. This activity includes meetings and communication with federal, state and local legislators, maintaining close working relationships with legislators and legislative staffs and the management of legislative issues. This activity also includes meetings and communications with government agencies in maintaining relationships with government agencies, and the overall management of regulatory issues (DOE, EPA, DOH, SEC, Maritime Administration, PUC and DCCA). Examples of issues addressed include land use, renewable energy, copper theft and revenue bond financing.
- c. Please see Attachment 2 for a comparative summary of annual historical labor and non-labor O&M charges to Activity 745 for each year from 2002 through 2006 actual in comparison to test year 2007 estimates.

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 745 - MAINTAIN RELATIONS WITH LEGISLATORS & GOVERNMENTAL AGENCIES  
TEST YEAR 2007 ESTIMATE (\$)

<u>NARUC</u> <u>Account No.</u>	<u>RA</u>	<u>Labor/Non-Labor</u>	<u>Revised</u> <u>Test Year</u> <u>Estimate</u>
920	M9P	Labor	3,652
921	M9P	Non-Labor	600
923.03	MAA	Non-Labor	4,079
923.03	MSA	Non-Labor	16,863
			<hr/> 25,194 <hr/>

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 745 - MAINTAIN RELATIONS WITH LEGISLATORS & GOVERNMENTAL AGENCIES  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	<u>Recorded</u> <u>2002</u>	<u>Recorded</u> <u>2003</u>	<u>Recorded</u> <u>2004</u>	<u>Recorded</u> <u>2005</u>	<u>Recorded</u> <u>2006</u>	<u>Op Budget</u> <u>2007</u>	<u>Direct</u> <u>Adjust</u>	<u>June</u> <u>Update</u> <u>Adjust</u>	<u>Revised</u> <u>Test Year</u> <u>Estimate</u>
Labor	2,982	13,433	3,966	3,216	1,262	3,652	-	-	3,652
Non-Labor	8,998	6,558	7,853	12,355	16,209	21,542	-	-	21,542
	11,980	19,991	11,819	15,571	17,471	25,194	-	-	25,194



CA-IR-273

**Ref: Institutional Goodwill Advertising.**

Please provide the following:

- a. Itemize and describe all labor and non-labor expenses by RA and NARUC Account in the test year that are charged to Activity 754 – Administer Institutional or Goodwill Advertising.
- b. Provide representative copies (or scripts for radio/TV) of advertising associated with the itemization of expenses provided in your response to part a of this information request.
- c. Provide a comparative summary of annual historical labor and non-labor charges to Activity 754 for each year 2002 through 2006 actual in comparison to test year 2007 values.

**MECO Response:**

- a. The expenses charged to Activity 754 - Administer Institutional or Goodwill Advertising included in MECO's 2007 test year estimate are accounted for entirely in Account No. 930.10 - Institutional or Goodwill Advertising expense. The test year estimate of \$2,700 in non-labor costs (there are no labor costs) is discussed by Mr. Lyle Matsunaga in MECO T-9, page 64, beginning on line 8. The \$2,700 estimate includes primarily the cost of Christmas decorations for MECO's administration office building and the cost of Christmas cards. In addition, the estimate includes \$500 to cover miscellaneous ads, which typically involve print advertisements used to enhance the Company's visibility in the Maui Electric Company, Ltd. service territory. The test year estimate does not include radio/TV advertising costs. Details for this test year estimate were provided in the MECO T-9 response to CA-IR-2, Attachment R, page 13.
- b. Please see the above response to part a.
- c. Please see Attachment 1 to this response.

MAUI ELECTRIC COMPANY, LTD.  
ACTIVITY 754 - ADMINISTER INSTITUTIONAL OR GOODWILL ADVERTISING  
RECORDED DATA FOR 2002 THROUGH 2006 AND TEST YEAR 2007 ESTIMATE (\$)

	Recorded <u>2002</u>	Recorded <u>2003</u>	Recorded <u>2004</u>	Recorded <u>2005</u>	Recorded <u>2006</u>	Op Budget <u>2007</u>	Direct <u>Adjust</u>	June Update <u>Adjust</u>	Revised Test Year <u>Estimate</u>
Labor	-	-	-	-	-	-	-	-	-
Non-Labor	779	2,485	3,208	1,153	1,709	2,790	-	-	2,790
	<u>779</u>	<u>2,485</u>	<u>3,208</u>	<u>1,153</u>	<u>1,709</u>	<u>2,790</u>	<u>-</u>	<u>-</u>	<u>2,790</u>

CA-IR-274

**Ref: MECO Response to CA-IR-36, Attachment 1 (Non-Utility Property/Expenses)**

Please provide the following:

- a. Explain whether the Commission has made any determination regarding whether the listed property is utility or non-utility property, with reference to any such determination.
- b. Provide calculations and supporting documentation for the 2007 test year corrections that are believed to be needed, as referenced in your response to CA-IR-36.

**MECO Response:**

- a. Attachment 1 of the Company's response to CA-IR-36 incorrectly indicated that the second item, "Land – 16,096 Sq. Feet", is located on Lahainaluna Road, Maui. The correct location of this property is Pomaikai Substation Lot #14 (Pomaikai Substation parcel) and is identified as the second line item in Attachment 1 to this response, which is a revision to the Attachment 1 provided in response to CA-IR-36. The cost for the Pomaikai Substation parcel was included in rate base in property held for future use in MECO's 1996 test year rate case, Docket No. 94-0345, and was accepted by the Commission in its Decision and Order No. 15544 (April 28, 1997). The Pomaikai Substation parcel was deleted from rate base in MECO's 1997 test year rate case, Docket No. 96-0040. In Decision and Order No. 16134 (December 23, 1997), page 11, the Commission indicated that at the Consumer Advocate's urging, "the Pomaikai Substation parcel was deleted since it has been held for more than 10 years without being placed into use". MECO has accounted for the Pomaikai Substation parcel as non-utility property since 1998 and has not included the cost of the Pomaikai Substation parcel in rate base since that time.

The first item listed on Attachment 1 to this response is the 25 acre parcel located on Kaunakakai Road, Molokai (Molokai property). As indicated in the Company's response to CA-IR-36, the Molokai property was acquired during the Company's acquisition of the

outstanding common stock of Molokai Electric Company, Limited, Docket No. 6341. In Decision and Order No. 10093 (December 30, 1988) the Commission did not specifically address the determination regarding whether the Molokai property is utility or non-utility property. However, MECO has accounted for the Molokai property as non-utility property since the time of acquisition in 1989 and has not included the cost of the Molokai property in rate base since that time.

The remaining items listed on Attachment 1 to this response are located on Lahainaluna Road, Maui (Lahainaluna Road property). As indicated in the Company's response to CA-IR-36, the Lahainaluna Road property was acquired during the Company's acquisition of the assets of Lahaina Light and Power Company, Ltd., Docket No. 1766. In Decision and Order No. 2105 (October 11, 1967) the Commission did not specifically address the determination regarding whether the Lahainaluna Road property is utility or non-utility property. However, MECO has accounted for the Lahainaluna Road property as non-utility property since 1968 and has not included the cost of the Lahainaluna Road property in rate base since that time.

- b. The response to CA-IR-36 indicated that costs to maintain the non-utility portion of the Molokai property were inadvertently charged to NARUC Account No. 549M (Miscellaneous Other Power Generation Expense) in 2006. The response to CA-IR-36 further indicated that the test year 2007 estimate would be corrected and amounts would be reclassified to NARUC Account No. 417 (Income from Nonutility Operations). Attachment 2 provides the calculation for the correction that should be made to MECO's test year 2007 estimate for NARUC Account No. 549M. The Company's June 2007 Update to MECO T-5, filed with the Commission on July 3, 2007, inadvertently did not include this correction; however the amount of the correction is small.

CA-IR-274  
DOCKET NO. 2006-0387  
ATTACHMENT 1  
PAGE 1 OF 1

CA-IR-36  
DOCKET NO. 2006-0387  
ATTACHMENT 1  
PAGE 1 OF 1  
REVISED AUGUST 2007 \*

Maui Electric Company, Limited  
Non-Utility Property  
As of December 31, 2006 (\$)

<u>Description</u>	<u>Location</u>	<u>Basis</u>	<u>Revenues</u>	<u>Expenses</u>
Land - 25 Acres	Kaunakakai Road, Molokai	175,000.00	-	7,683.89
Land - 16,096 Sq. Feet	Pomaikai Substation Lot #14 *	24,205.80	-	867.28
Land & Land Rts	Lahainaluna Road, Maui	2,106.00	-	-
Office Bldg & Improvements	Lahainaluna Road, Maui	25,066.89	-	-
Office Machines	Lahainaluna Road, Maui	1,926.42	-	48.14
Office Furniture	Lahainaluna Road, Maui	279.08	-	-
Total Non-Utility Property		<u>228,584.19</u>	<u>-</u>	<u>8,599.31</u>

\* Note: The revision dated August 2007 was made to correct the location for the property identified above as "Land - 16,096 Sq. Feet" which was incorrectly stated in Attachment 1 to the response to CA-IR-36.

Maui Electric Company, Limited  
Test Year 2007 Expenses Allocable to Maintenance of Molokai Non-Utility Property (\$)

Allocable Expenses Included in Account No	9,706
Allocation Percentage	<u>50%</u>
Amount Allocable to Non-Utility Expense	<u>4,853</u>

CA-IR-275

**Ref: MECO response to CA-IR-28 (Efficiency Programs).**

In March 2005, MECO, HECO and HELCO renewed a Strategic Alliance Agreement with ABB Inc. Power Technologies Division. Please provide the following information:

- a. In deciding to renew this agreement, were any studies prepared by, or for, MECO for purposes of evaluating the cost savings or efficiencies expected to be realized during the term of this renewal agreement? Please explain.
- b. Since the renewal agreement was executed in March 2005, have any studies or analyses been prepared by or for MECO that are designed to quantify any cost savings or efficiencies actually realized as a result of this agreement? Please explain.
- c. Please provide a copy of any studies identified in response to parts (a) and (b) above.
- d. If the responses to parts (a) and (b) above indicate that no such studies have been or will be prepared, please explain how MECO determined that entering into this renewal agreement does result in cost savings and efficiencies.

**MECO Response:**

- a. The Company did not prepare any studies and is not aware of any studies prepared on its behalf either in deciding to renew the agreement or subsequent to renewing the agreement for purposes of evaluating or quantifying the cost savings or efficiencies expected to be realized or actually realized during the term of the renewal agreement. However, it was apparent that cost savings would result from renewing the agreement. For example, the negotiated discounted pricing shown in Attachments A1, A2 and A6 of the Strategic Alliance Agreement with ABB Inc. Power Technologies Division ("ABB") represented significant reductions below ABB's list prices for hardware and services. Also, as previously stated in MECO's response to CA-IR-28, "This strategic alliance agreement provides several benefits including services and products at discounted rates, priority scheduling for delivery of products and services, dedicated project management team from ABB, spare parts management, and discounted rates on software maintenance."
- b. Please see response to part a. above.
- c. Not applicable. Please see response to part a. above.
- d. Please see response to part a. above.

CA-IR-276

**Ref: MECO response to CA-IR-28 (Efficiency Programs).**

Regarding the Strategic Alliance Agreement with ABB Inc. Power Technologies Division, please provide the following information:

- a. Do the terms of the Alliance Agreement include progress payments, target payments or incentive payments by MECO, HECO or HELCO provided that certain milestones, cost savings or benefit levels are achieved under the agreement? Please explain.
- b. If the response to part (a) above is affirmative, please describe each milestone, cost savings or benefit target and explain how actual attainment of each target is qualitatively or quantitatively determined.
- c. Please provide the amount of any payment amounts (by NARUC account) referenced in response to part (a) above actually incurred in 2006 and included in the 2007 test year forecast.

**MECO Response:**

- a. The pricing and payment terms for orders under the Strategic Alliance Agreement with ABB Inc. Power Technologies Division ("Agreement") would generally be determined on a project-by-project basis in accordance with sections VII, Pricing Provisions, and IX, Agreement Terms & Conditions, of the Agreement. However, section VIII, Optional Payment Terms, of the Agreement makes available to the Companies optional payment terms for projects that could result in process/performance improvements. For example, section VIII.B., Return on Investment, of the Agreement provides for, "...periodic payments based on monthly benefits received from the solutions implemented.", and section VIII.C., Shared Risk/Return, of the Agreement provides for target payments which are dependent on the achievement of target benefits. Although these optional payment terms are available under the Agreement, MECO has not yet had any process/performance improvement project opportunities in which to elect these options.
- b. Please see the response to part a. above.
- c. Not applicable.



CA-IR-277

**Ref: Response to CA-IR-79 (Capability and Heat Rate Tests).**

Please provide the following:

- a. Updated information and results obtained from the "capability test" scheduled for late July 2007, indicating any issues or deficiencies that are noted and the planned resolution of same.
- b. Updated information and results obtained from the "heat rate test" scheduled for July 2007, indicating any issues or deficiencies that are noted and whether any adjustment to rate case heat rate assumptions is required.

**MECO Response:**

- a. The "capability test" originally scheduled for late July 2007 was completed in September 2007 and the results became available in October 2007. The results indicate that at the environmental conditions during the time of the test the Dual-Train Combined Cycle system of M17/18/19 achieved a capability of 55.89 MW (Gross) or 54.58 MW (Net). The requested information is provided on page 5 of this response.
- b. The "heat rate test" originally scheduled for late July 2007 was completed in September 2007 and the results became available in October 2007. The data for the heat rate test are provided in page 5 of this response. The dual-train combined cycle ("DTCC") heat rate curve is provided on page 6 of this response. The single-train combined cycle ("STCC") heat rate curve for units M17/18 and M19/18 are provided on page 7 of this response. The data for these heat rate curves are provided on pages 8 to 10.

As indicated in the direct testimony of Mr. Sakuda in MECO T-4, on page 29, lines 9 to 17, "The dual train combined cycle units are modeled as two halves of the dual train for both M14, 15, and 16 and M17, 18, and 19. In other words, each dual train combined cycle

is modeled as if it is two single train combined cycle units, with each having one-half the capacity of the dual train combined cycle. For M17, 18, and 19, one-half is modeled as a baseload unit and the other half is modeled as a cycling unit to match how the units are actually operated. Each half was modeled as an individual thermal unit. M14, 15, and 16 was also modeled as two individual thermal units, but both halves were modeled baseloaded because that is how the units are actually operated.”

Page 10 of this response shows the heat rate curves for M17-18-19 operating in DTCC mode, and M17-18 and M19-18 operating in STCC mode. These curves were derived from the tests conducted in September 2007. Also shown is the heat rate curve used to represent the operation of M17-18-19 in DTCC mode in the rate case direct testimony production simulation. As indicated in the section of the testimony referenced above, one half of the M17-18-19 DTCC is cycled off during light-loading period (unlike the M14-15-16 DTCC, which has both halves operated continuously). When M17-18 or M19-18 are operating in STCC mode, the actual heat rate curve is much steeper than heat rate curve used to model STCC operation during the light-loading period. Therefore, the production simulation will understate the heat rate and fuel expense of the unit whenever the unit is dispatched at low loads.

Maui Division’s projected test year composite diesel heat rate was 8,885 Btu/kWh-net, as shown on MECO-406, page 1, line 15. Maui’s recorded composite diesel heat rate for the period January to July 2007 was 9,129 Btu/kWh-net. The higher recorded composite diesel heat rate may be a result of several factors, including but not limited to: (a) a higher average amount of regulating reserve carried (compared to the amount modeled in the production

simulation) to counteract the power output fluctuations of the Kaheawa wind farm; (b) poorer generating unit efficiency due to constant modulation of output to counteract the wind farm power output fluctuations (Generating units perform most efficiently at constant output. The heat rate tests were conducted under steady-state conditions and the results would reflect higher efficiencies than under actual, modulating conditions.); and (c) the lower than actual heat rates modeled during the light-loading periods. MECO operates either M17 or M19 in STCC mode every night at or near minimum load to allow more generation from the Kaheawa wind farm to be accepted during the off-peak period. More analysis would need to be done to determine the extent to which each of these factors is contributing to the higher than projected diesel heat rate.

Despite the indication that Maui's test year composite diesel heat rate given in its direct testimony is understated, MECO is not proposing to update its production simulation.

MAALAEA 18  
GENPP 07  
WP3/YE

## INTEROFFICE CORRESPONDENCE

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**Hawaiian Electric Company**

October 22, 2007

To: Michael Ribao

From: Andy W.K. Ho 

Subject: Test Data, Results from Maalaea Units 17/18/19

Testing of M17/18/19 was completed on 9/28 to 9/29. The purpose of that test was to determine input/output characteristics and to obtain parametric information of the units during Dual Train Combined Cycle (DTCC). Testing was done on M17/18 and M19/18 Single Train Combined Cycle and M17/18/19 Dual Train Combined Cycle. The following is the result of that effort.

M17 and M19 loads and heat rates were adjusted to average site conditions using the Stewart & Stevenson, Factory Test Procedures. Input/Output ABC coefficients were calculated for average site conditions.

If there are any questions or comments, please call myself at ext. 4294 or Richard Wang at ext. 7248.

Attachment:

Maalaea17\_18\_19Heat RateResults.1007.xls

cc: w/attachment: R. Jung

## M17/18/19 Test Results-Corrected to 85 Degr. F Inlet

## STCC Results

## M17 STCC

M17				M18				M19				Total				Heat Rate	
Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW		Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gross	Net
12.80	0.35	12.44	155.34	4.04	0.31	3.73		-				16.84	0.66	16.18	155.34	9,225	9,603
14.24	0.34	13.90	167.62	4.49	0.33	4.16		-				18.72	0.66	18.06	167.62	8,952	9,281
15.77	0.38	15.39	181.02	5.09	0.33	4.75		-				20.85	0.71	20.14	181.02	8,680	8,986
17.29	0.35	16.94	194.64	5.49	0.34	5.16		-				22.78	0.68	22.10	194.64	8,543	8,807
18.89	0.39	18.51	209.21	6.11	0.36	5.75		-				25.01	0.75	24.26	209.21	8,367	8,624

## M19 STCC

M17				M18				M19				Total				Heat Rate	
Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW		Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gross	Net
-	-	-	-	3.80	0.30	3.50		12.80	0.30	12.50	155.37	16.60	0.60	16.00	155.37	9,360	9,713
-	-	-	-	4.45	0.31	4.14		14.82	0.30	14.52	172.73	19.27	0.61	18.66	172.73	8,964	9,257
-	-	-	-	4.84	0.32	4.52		16.21	0.28	15.93	184.91	21.05	0.60	20.45	184.91	8,785	9,044
-	-	-	-	5.58	0.35	5.23		17.63	0.29	17.34	197.30	23.21	0.63	22.58	197.30	8,501	8,738
-	-	-	-	6.25	0.34	5.91		19.52	0.30	19.22	215.36	25.77	0.63	25.14	215.36	8,357	8,567

## DTCC Results

Peak Reserve shown on last line

M17				M18				M19				Total				Heat Rate	
Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW		Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gr. MW	Aux MW	Net MW	Mbtu/Hr	Gross	Net
12.92	0.46	12.46	156.50	10.17	0.46	9.71		13.08	0.29	12.79	158.99	36.18	1.20	34.97	315.49	8,721	9,021
14.53	0.44	14.09	169.78	11.03	0.46	10.57		14.70	0.30	14.41	173.20	40.26	1.19	39.07	342.98	8,520	8,779
16.08	0.45	15.62	183.13	11.87	0.48	11.39		16.17	0.31	15.87	186.28	44.12	1.24	42.88	369.41	8,373	8,615
17.64	0.48	17.16	197.10	12.80	0.48	12.31		17.68	0.28	17.40	199.92	48.12	1.24	46.87	397.02	8,251	8,470
18.83	0.53	18.29	207.39	13.72	0.48	13.24		19.34	0.29	19.05	215.01	51.88	1.30	50.58	422.40	8,142	8,352
20.40	0.53	19.87	221.76	14.77	0.48	14.29		20.71	0.30	20.42	227.90	55.89	1.31	54.58	449.67	8,046	8,239

Peak Reserve

	Net I/O ABCs			Gross I/O ABCs		
	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
A	61.1805	56.1471	84.6368	55.9372	52.0441	71.987
B	5.2563	6.0197	6.4136	5.4295	6.0672	6.6643
C	0.03498	0.01202	0.00527	0.02818	0.01002	0.00178

Peak Reserve

Not Used in ABC Calc for DTCC

## Notes:

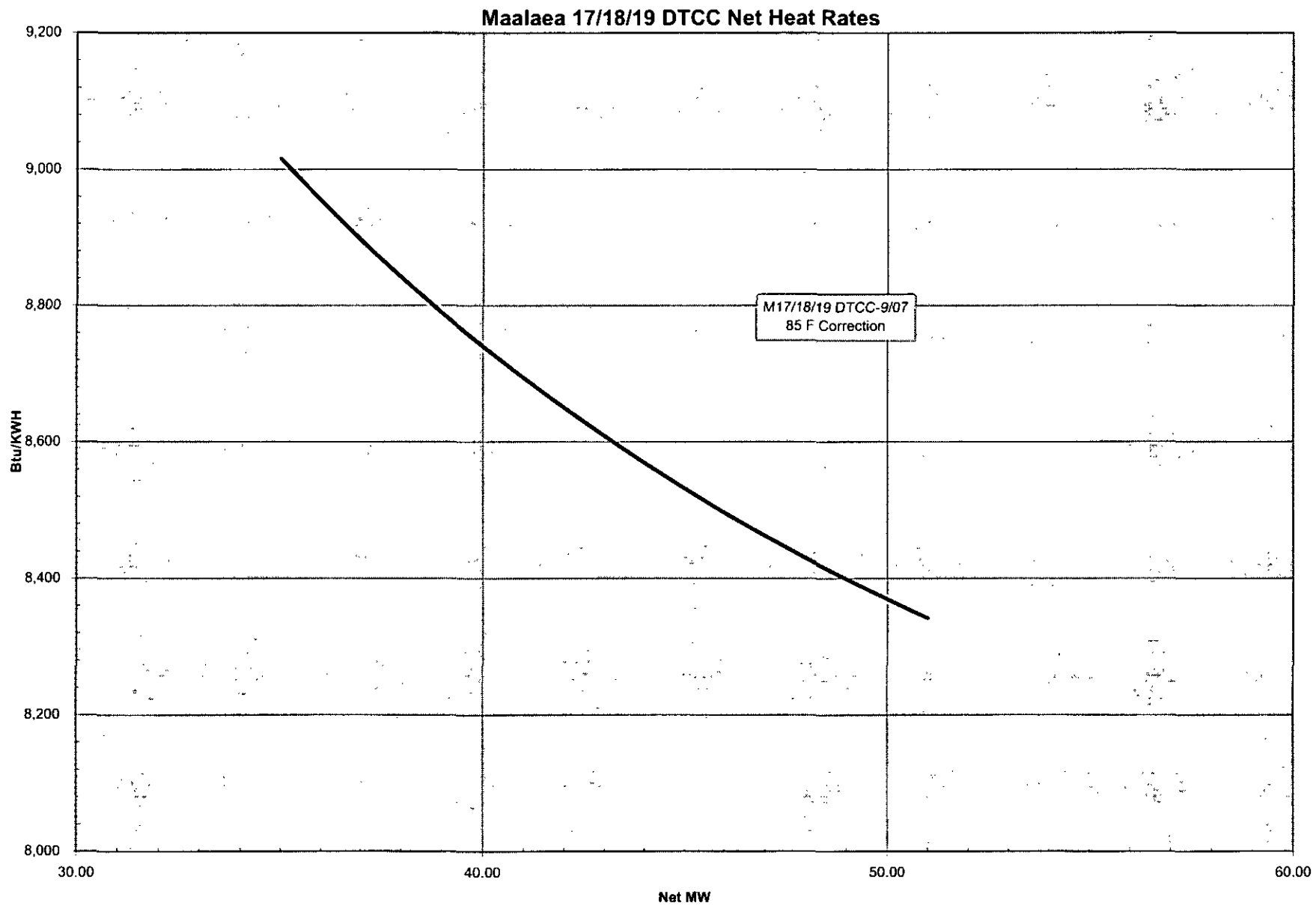
1. By AWKHo &amp; RWang, 10/15/07.

2. Reference files:

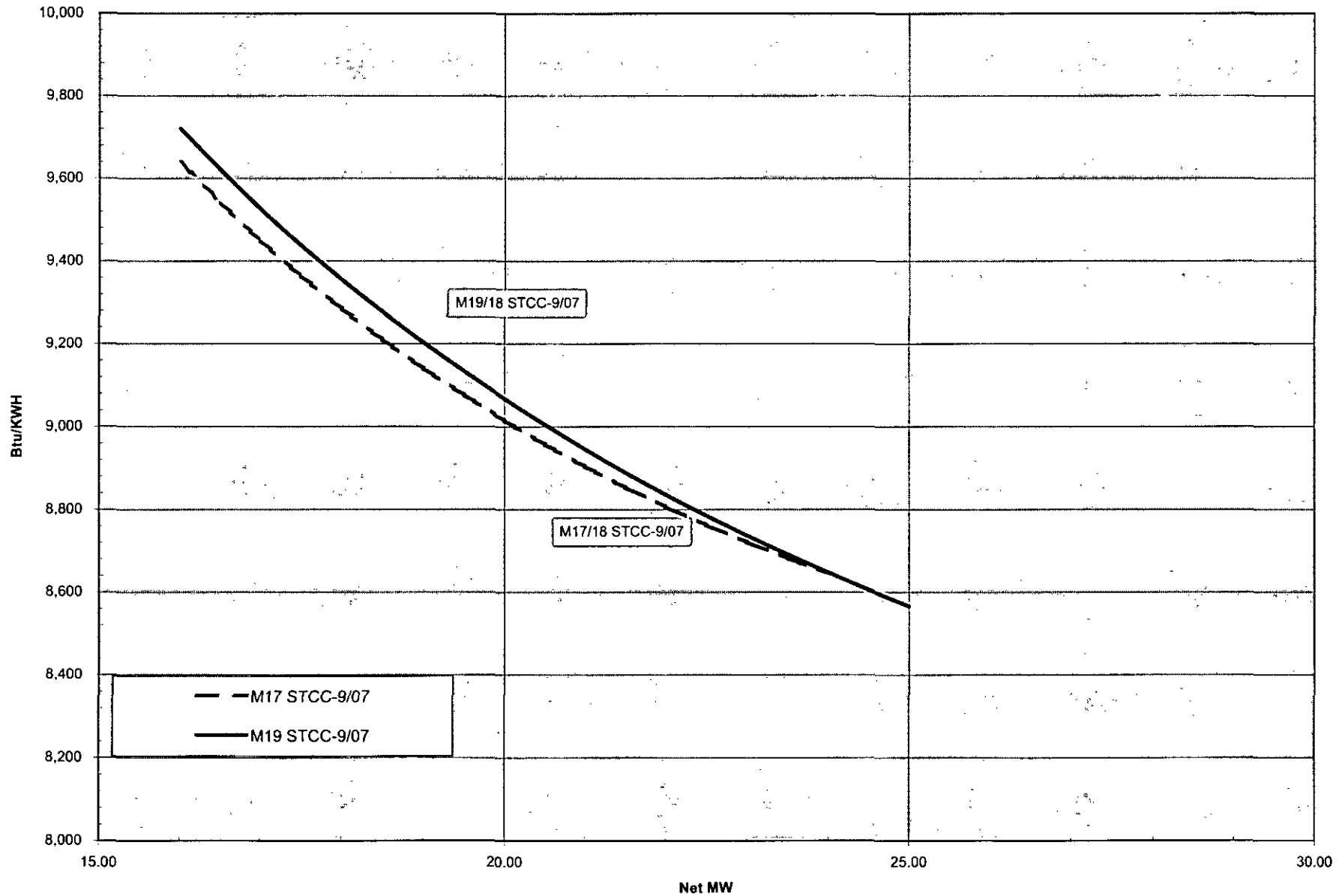
M17\_19STCC\_IO\_Calcs0907.xls

M17-18-19 DTCC IO Calcs.xls

Used to adjust test data for M17/19 CTs to 85 Degr. F inlet conditions using Stewart &amp; Stevenson Factory Test Procedures.



### Maalaea 17/18 & 19/18 STCC Net Heat Rates



# Heat Rate Comparisons

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
A	61.1805	56.1471	84.6368
B	5.25625	6.01974	6.41364
C	0.034981	0.0120154	0.0052705

## Net MW

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
10.00			
10.50			
11.00			
11.50			
12.00			
12.50			
13.00			
13.50			
14.00			
14.50			
15.00			
15.50			
16.00	9,640	9,721	
16.50	9,541	9,621	
17.00	9,450	9,527	
17.50	9,364	9,438	
18.00	9,285	9,355	
18.50	9,210	9,277	
19.00	9,141	9,203	
19.50	9,076	9,133	
20.00	9,015	9,067	
20.50	8,958	9,005	
21.00	8,904	8,946	
21.50	8,854	8,890	
22.00	8,807	8,836	
22.50	8,762	8,786	
23.00	8,721	8,737	
23.50	8,682	8,691	
24.00	8,645	8,648	
24.50		8,606	
25.00		8,566	
25.50			
26.00			
26.50			
27.00			
27.50			
28.00			



# Heat Rate Comparisons

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
A	61.1805	56.1471	84.6368
B	5.25625	6.01974	6.41364
C	0.034981	0.0120154	0.0052705

## Net MW

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
28.50			
29.00			
29.50			
30.00			
30.50			
31.00			
31.50			
32.00			
32.50			
33.00			
33.50			
34.00			
34.50			
35.00			9,016
35.50			8,985
36.00			8,954
36.50			8,925
37.00			8,896
37.50			8,868
38.00			8,841
38.50			8,815
39.00			8,789
39.50			8,765
40.00			8,740
40.50			8,717
41.00			8,694
41.50			8,672
42.00			8,650
42.50			8,629
43.00			8,609
43.50			8,589
44.00			8,569
44.50			8,550
45.00			8,532
45.50			8,514
46.00			8,496
46.50			8,479

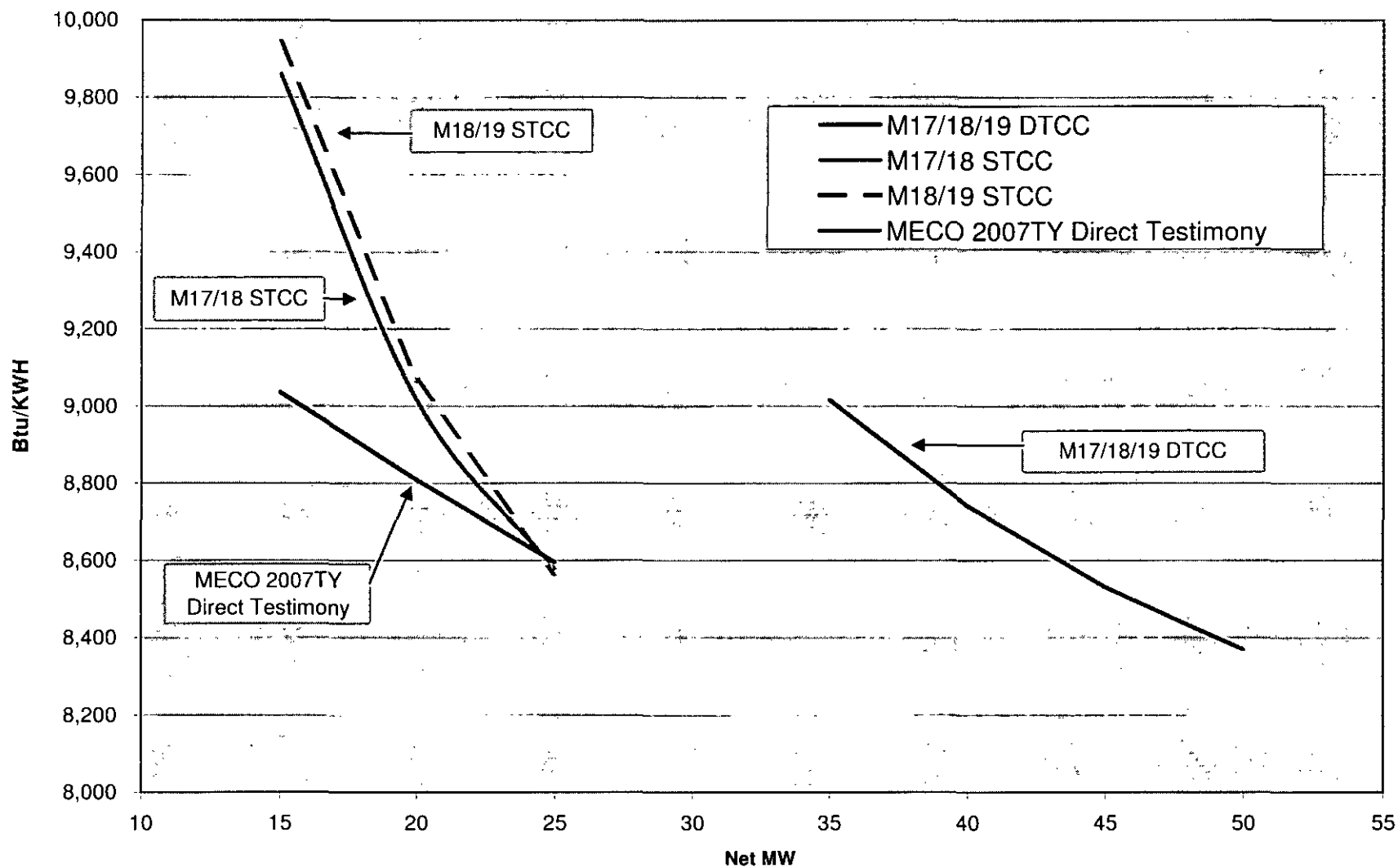
### Heat Rate Comparisons

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
A	61.1805	56.1471	84.6368
B	5.25625	6.01974	6.41364
C	0.034981	0.0120154	0.0052705

### Net MW

	M17 STCC-9/07	M19 STCC-9/07	M17/18/19 DTCC-9/07
47.00			8,462
47.50			8,446
48.00			8,430
48.50			8,414
49.00			8,399
49.50			8,384
50.00			8,370
50.50			8,356
51.00			8,342
51.50			
52.00			
52.50			
53.00			
53.50			
54.00			
54.50			
55.00			
55.50			
56.00			

### Comparison of Maalaea STCC and DTCC Net Heat Rate



CA-IR-277

**Ref: Response to CA-IR-79 (Capability and Heat Rate Tests).**

Please provide the following:

- a. Updated information and results obtained from the "capability test" scheduled for late July 2007, indicating any issues or deficiencies that are noted and the planned resolution of same.
- b. Updated information and results obtained from the "heat rate test" scheduled for July 2007, indicating any issues or deficiencies that are noted and whether any adjustment to rate case heat rate assumptions is required.

**MECO Response:**

- a. The "capability test" originally scheduled for late July 2007 has been postponed and is currently planned for September 2007. The requested information will be provided when it becomes available.
- b. The "heat rate test" originally scheduled for late July 2007 has been postponed and is currently planned for September 2007. The requested information will be provided when it becomes available.

CA-IR-278

**Ref: Response to CA-IR-84, Attachment 1 (CT Hot Section Expenses).**

Please provide the following information regarding the historical and proposed costs for CT Hot Section Expenses:

- a. Attachment 1, page 5 indicates Hot Section expenses in boxed cells during actual 2001 through 2005 that vary from \$545,007 (M17 in 2004) to \$891,175 (M16 in 2002). Please explain differences in scope of work and other issues that explain the variability in such costs and provide overhaul report documentation associated with each Hot Section shown on this page.
- b. Attachment 1, page 12 indicates Hot Section expenses in boxed cells during actual 1995 through 1999 that vary from \$467,884 (M14 in 1999) to \$799,503 (M14 in 1995). Please explain differences in scope of work and other issues that explain the variability in such costs and provide overhaul report documentation associated with each Hot Section shown on this page.
- c. Explain and reconcile the amount of normalized Hot Section cost for M14 of \$811,717 at MECO-WP-505, page 1, to the information provided in your responses to parts (a) and (b) of this information request.
- d. Explain and reconcile the amount of normalized Hot Section cost for M16 of \$857,739 at MECO-WP-505, page 1, to the information provided in your responses to parts (a) and (b) of this information request.
- e. Explain and reconcile the amount of normalized Hot Section cost for M17 of \$699,119 at MECO-WP-505, page 2, to the information provided in your responses to parts (a) and (b) of this information request.
- f. Explain and reconcile the amount of normalized Hot Section cost for M19 of \$821,080 at MECO-WP-505, page 2, to the information provided in your responses to parts (a) and (b) of this information request.

**MECO Response:**

- a. Total costs for a hot section replacement will depend upon the amount of work needed to refurbish the engine. The average hot section replacement costs for maintenance done between 2001 and 2005 was \$823,782 (Average of \$844,039 + \$779,395 + \$891,175 + \$824,302 + \$780,000), excluding the earlier than normal hot section replacement done on M17 in 2004. The hot section replacement on M17 in 2004 was done earlier than normal, because excessive wear was noticed on the power turbine side of the engine. Instead of taking the unit down twice to repair the power turbine and hot section, one outage was taken

to handle both maintenance items. The hot section for this unit was found to be in good condition and not much repair was needed for it, hence the lower cost for this work. The hot section replacement reports are too voluminous to submit, and the CT maintenance supervisor has advised that he needs to have the only copy of the hot section replacement reports at the Maalaea Power Plant. The hot section replacement reports can be made available for review at the Maalaea Power Plant. Please contact Dean Matsuura to arrange a review of the hot section replacement reports. A copy of the title page of the reports between 2001 and 2005 are included as Exhibit 1.

- b. In 1999 unit M14 received its first 50,000 hour overhaul. Since the overhaul also included refurbishing the hot section and the low pressure turbine (LPT), these costs were separated out of the total overhaul cost to identify their individual repair costs. The total cost for this overhaul was: \$2,274,133 of which \$467,884 was considered for the hot section, \$612,093 was removed for the LPT and the balance of \$1,194,156 was for the 50,000 hour overhaul. Because the hot section was removed with the LPT and the rest of the engine and shipped to the factory for overhaul, the hot section cost was lower than normal. The cost incurred in 1995 was just the cost for a hot section replacement at \$835,334 (\$17,490 materials + \$799,503 outside services + \$12,890 materials + \$1,123 materials + \$4,328 outside services). The \$1,123 material cost and \$4,328 outside service cost were late charges incurred in 1996 for this hot section replacement work. The hot section replacement reports are too voluminous to submit, and the CT maintenance supervisor has advised that he needs to have the only copy of the hot section reports at the Maalaea Power Plant. The hot section replacement reports can be made available for review at the Maalaea Power Plant. Please contact Dean Matsuura to arrange a review of the hot section replacement reports. A copy of the title page of the reports between 1995 and 1999 are included as Exhibit 2.

- c. The average cost for the hot section replacement done on M14 between 2001 and 2003 is  $\$811,717 = (\$844,039 + \$779,395) \div 2$ . This cost compares favorably with the average hot section replacement cost of  $\$823,782$  for all the hot sections done between 2001 and 2005 as explained in section a of this response, excluding the earlier than normal hot section replacement done on M17 in 2004.
- d. The cost for the M16 hot section of  $\$857,739$  compares favorably with the other hot section replacement costs. As previously mentioned the costs to do a hot section replacement will vary due to the amount of work needed on the engine. The  $\$857,739$  cost is the average cost of hot section replacements done in 2002 and 2004 on unit M16.  $(\$891,175 + \$824,302) \div 2 = \$857,739$ .
- e. The lower than normal cost for the M17 hot section replacement of  $\$699,119$  in 2004 resulted from an earlier than normal hot section replacement, as explained in section a. Had the hot section replacement been done at a later date, closer to the end of the 12,500 hour maintenance period, the cost would have been greater. If a second outage to replace the hot section was done at a later date additional costs for a qualified contactor would be incurred and the unit would be out-of-service an additional 3 days. With more usage on the engine the cost for this hot section replacement would cost more than the  $\$699,119$ . The  $\$545,007$  shown in CA-IR-84, Attachment 1, Page 5, represents only outside contracted service for the hot section replacement. The total of  $\$699,119$  shown in MECO-WP-505, Page 2, includes material costs and electrical services incurred with this particular hot section replacement.
- f. The cost used to normalize the M19 hot section is from the last hot section replacement done on this engine. The  $\$821,080$  is reasonable compared to the average  $\$823,782$  of all hot section replacements done between 2001 and 2005, excluding the earlier than normal hot section done on M17 in 2004.

M-14  
HOT SECTION REPORT  
2001

REPORT NOT FOUND



# M-14 HOT SECTION



CA-IR-278  
DOCKET NO. 2006-0387  
EXHIBIT 1  
PAGE 2 OF 7

## I. Engine and Job Information:

**Engine Serial Number:** Hot Section Module

**Work Order Number:** L03010

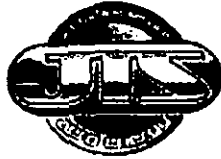
**Customer:** Maui Electric Company

**Model #:** LM2500 (Single Shank Configuration)

**Received:** 10/30/2003

**Shipped:** 01/24/2004

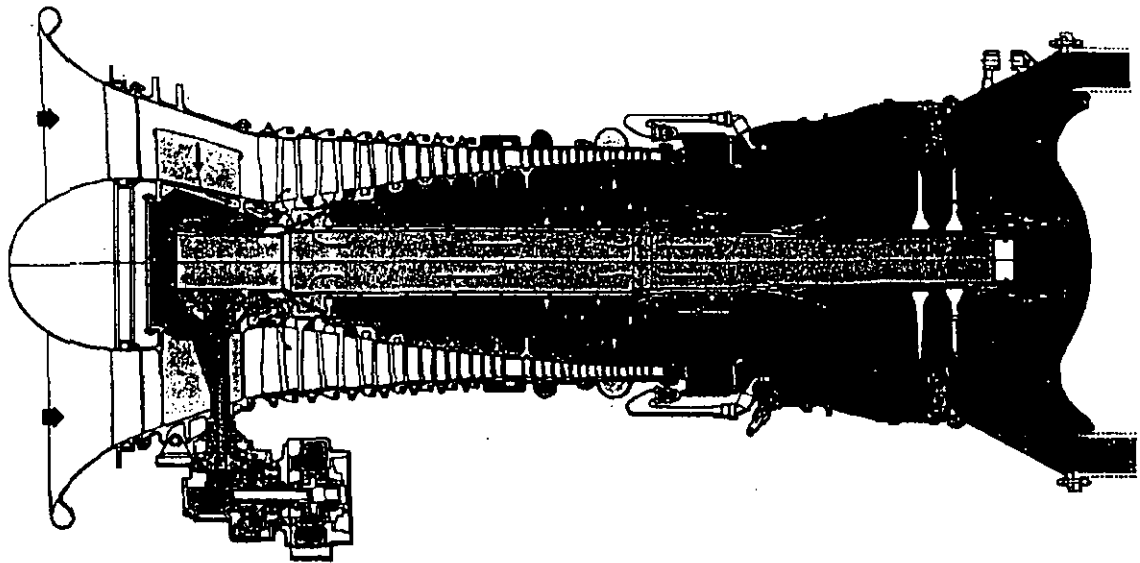




## Field Service Report

### Maui Electric Company, Ltd.

210 West Kamahameha Avenue  
Kahului, Maui, Hawaii.  
96733-6898



### LM2500 HOT SECTION EXCHANGE

Unit M14

ESN 481-637

*05-30-05 thru 6-02-05*

PREPARED BY: Ted E. Uhl

M-16  
HOT SECTION REPORT  
2002

REPORT NOT FOUND

M-16  
HOT SECTION REPORT  
2004

REPORT NOT FOUND

M-17  
HOT SECTION



CA-IR-278  
DOCKET NO. 2006-0387  
EXHIBIT 1  
PAGE 6 OF 7

**I. Engine and Job Information:**

**Engine Serial Number:** Hot Section Module

**Work Order Number:** LM04008

**Customer:** Maui Electric Company

**Model #:** LM2500 (Single Shank Configuration)

**Received:** 6/14/2004

**Shipped:** 8/30/2004



## M-19 HOT SECTION

**Jet Turbine Service, Inc.**  
620 N.W. 35<sup>th</sup> Street  
Boca Raton, Florida 33431  
Telephone: (561) 417 4537  
Fax: (561) 417 0772

### I. Engine and Job Information:

**Engine Number:** N/A (Hot Section Module)

**Work Order Number:** L03004

**Customer:** Maui Electric Co.

**Model #:** LM2500 (Single Shank Configuration)

**Received:** 6/6/03

**Shipped:** 8/22/03

*Stewart & Stevenson Technical Services, Inc.*

*HPT Exchange*

## CUSTOMER/HPT INFORMATION

CUSTOMER ..... Maui Electric Co., Ltd.  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABCG374  
HPT ROTOR S/N..... SPKO2804  
STAGE 2 HPT NOZZLE S/N ..... GEVG9060  
SSTS SO# ..... G22019  
SSTS WO# ..... 800300

*Stewart & Stevenson Technical Services, Inc.*

*LM2500 HPT Repair Report*

**CUSTOMER/TURBINE INFORMATION**  
**M-14**  
**HOT SECTION**

CA-IR-279  
DOCKET NO. 2006-0387  
EXHIBIT 3  
PAGE 3 OF 8

CUSTOMER..... Maui Electric Company  
ENGINE MODEL..... LM2500  
ENGINE S/N .....  
REASON FOR REMOVAL .....  
SSTS SO#.....  
SSTS WO# ..... 804485  
DATE RECEIVED ..... April 4, 1997  
DATE SHIPPED .....



GE PACKAGED POWER, INC.

LM2500 Overhaul Report

CA-IR-279  
DOCKET NO. 2006-0387  
EXHIBIT 2  
PAGE 3 OF 3

## CUSTOMER/TURBINE INFORMATION

### M-14

## OVERHAUL & HOT SECTION

CUSTOMER..... Maui Electric  
ENGINE MODEL..... LM2500  
ENGINE S/N ..... 481-637  
REASON FOR REMOVAL..... Overhaul  
GEPI WO#..... G22665W  
DATE RECEIVED ..... March 26, 1999  
DATE SHIPPED..... August 25, 1999

Original and detailed records are on file and available for review upon request at our facility

Stewart & Stevenson Technical Services, Inc.

HPT Exchange

## CUSTOMER/HPT INFORMATION

CA-IR-279  
DOCKET NO. 2006-0387  
EXHIBIT 3  
PAGE 6 OF 8

CUSTOMER ..... Maui Electric Co., Ltd.  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABSL094  
HPT ROTOR S/N..... SPKO5644  
STAGE 2 HPT NOZZLE S/N ..... GEVN8383  
SSTS SO# ..... G22215  
SSTS WO# ..... 802848

M-16  
HOT SECTION  
03-1996

Stewart & Stevenson Technical Services, Inc.

HPT Exchange

## CUSTOMER/HPT INFORMATION

CA-IR-279  
DOCKET NO. 2006-0387  
EXHIBIT 3  
PAGE 5 OF 8

CUSTOMER ..... Maui Electric Co., Ltd.  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABSL094  
HPT ROTOR S/N..... SPKO5644  
STAGE 2 HPT NOZZLE S/N ..... GEVN8383  
SSTS SO# ..... G22215  
SSTS WO# ..... 802848

M-16  
HOT SECTION  
11-1997

CA-IR-278  
DOCKET NO. 2006-0387  
EXHIBIT 2  
PAGE 6 OF 6

CA-IR-278  
DOCKET NO. 2006-0387  
EXHIBIT 2  
PAGE 6 OF 6

M-16  
HOT SECTION REPORT  
1999

REPORT NOT FOUND

CA-IR-279

**Ref: Response to CA-IR-84, Attachment 1 (CT Major Overhauls).**

Please provide the following regarding the historical and proposed costs for CT Major Overhaul Expenses:

- a. Confirm that Attachment 1, page 5 indicates only one actual Combustion Turbine Major Overhaul occurred from 2001 through 2005 at a cost of \$1,918,639 (M14 in 2005). Please explain the scope of work and provide overhaul report documentation associated with this overhaul.
- b. Attachment 1, page 12 indicates Major Overhaul expenses in boxed cells occurred during 1999 at costs of \$1,194,155 (M14 in 1999) and \$928,616 (M16 in 1999). Please explain differences in scope of work and other issues that explain the variability in such costs and provide overhaul report documentation associated with each Hot Section shown on this page.
- c. Explain all reasons why it is reasonable to use the actual Major Overhaul cost for M14 in 2005 of \$1,918,639 at MECO-WP-505, page 1, for Unit M14, while higher budgeted 2007 cost amounts of \$2,532,060 are used for M16, M17 and M19 Major Overhauls in the normalization calculations.
- d. Explain and reconcile the amount of normalized Major Overhaul expenses for M16, M17 and M19 of \$2,532,060 at MECO-WP-505, pages 1 and 2, to the information provided in your responses to parts (a) and (b) of this information request.

**MECO Response:**

- a. MECO confirms that only one Combustion Turbine Major Overhaul occurred from 2001 through 2005 at an updated cost of \$1,926,400 (M14 in 2005). This overhaul consisted of taking the engine apart at a qualified facility and rebuilding it to manufacturer's specifications. The overhaul report is too voluminous to submit, and the CT maintenance supervisor has advised that he needs to have the only copy of the overhaul report at the Maalaea Power Plant. The overhaul report can be made available for review at the Maalaea Power Plant. Please contact Dean Matsuura to arrange a review of the overhaul report.  
  
A copy of the title page of the report is included as Exhibit 1.
- b. The difference between the M14 and M16 overhaul costs shown in CA-IR-84, Attachment 1, Page 5 is because the M14 nonlabor overhaul cost of \$1,926,400 (materials \$31,564, services

\$1,906,977, and other services \$2,615) is the total nonlabor cost of the engine overhaul done in 1999, while the M16 cost shown of \$928,616 is only some of the nonlabor cost of the engine overhaul – this partial nonlabor cost represents the cost that was accumulated in 1999. The engine for M14 was removed for overhaul on February 20, 1999 and reinstalled on September 19, 1999, while the engine on unit M16 was removed for overhaul on October 9, 1999 and reinstalled on April 30, 2000. The balance of the M16 overhaul cost was recorded in the year 2000 for a total nonlabor overhaul cost of \$2,337,036 (materials \$11,646, services \$2,321,279, and other services \$4,111). MECO is presently missing the 1999-2000 overhaul report on unit M16 and is currently seeking information to obtain another copy. The hot section replacement reports are too voluminous to submit, and the CT maintenance supervisor has advised that he needs to have the only copy of the hot section reports at the Maalaea Power Plant. The hot section replacement reports can be made available for review at the Maalaea Power Plant. Please contact Dean Matsuura to arrange a review of the hot section reports. A copy of the title page of the report is included as Exhibit 2.

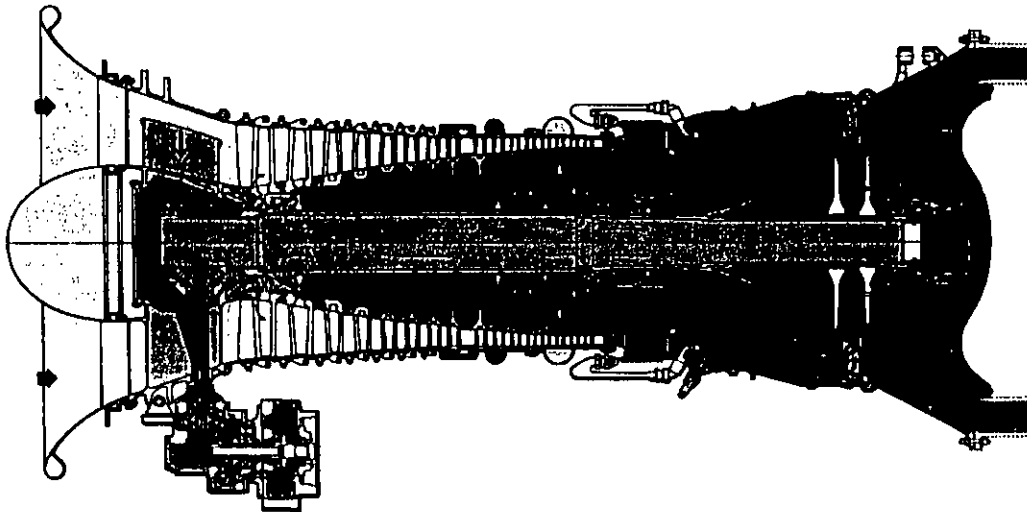
- c. Overhaul costs can vary depending on the amount of work needed to be done on an overhaul and the vendor selected to do the overhaul, so using the latest combustion turbine overhaul cost for each unit reflects reasonable estimates of costs for normalization purposes. The budget estimate of \$2,532,060 for M16, M17, and M18, are based on the last 50,000 hour overhaul done on M16 in the year 2000 at a cost of \$2,320,734, escalated to 2003 dollars (\$2,529,600), plus \$3,000 for two mainland trips to the repair facility to identify the overhaul workscope and to witness the performance test on the overhauled engine before leaving the repair facility.
- d. See the response to part c.



## Field Service Report

### Maui Electric Company, Ltd.

210 West Kamahameha Avenue  
Kahului, Maui, Hawaii.  
96733-6898



### **LM2500 ENGINE EXCHANGE**

**Unit M14**

**Removed (ESN 481-637)**

**Installed (ESN 481-677)**

**09-29-05 thru 10-03-05**

**PREPARED BY: Ted E. Uhl**



## **ENGINE BUILD UP AND BORESCOPE REPORT**

**MAUI ELECTRIC COMPANY, LTD.**

**210 West Kamahameha Avenue  
Kahului, Maui, Hawaii**

**96733-6898**

**ESN 481-637**

**2-07-06 thru 2-23-06**

**PREPARED BY:**

***Ted E. Uhl***



*Stewart & Stevenson Technical Services, Inc.*

*HPT Exchange*

## CUSTOMER/HPT INFORMATION

CUSTOMER ..... Maui Electric Co., Ltd.  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABCG374  
HPT ROTOR S/N..... SPKO2804  
STAGE 2 HPT NOZZLE S/N ..... GEVG9060  
SSTS SO# ..... G22019  
SSTS WO# ..... 800300

*Stewart & Stevenson Technical Services, Inc.*

*LM2500 HPT Overhaul Report*

## CUSTOMER/TURBINE INFORMATION

CUSTOMER ..... Maui  
ENGINE MODEL ..... LM2500  
ENGINE S/N .....  
REASON FOR REMOVAL ..... HPT Overhaul  
SSTS SO# .....  
SSTS WO# ..... 803942  
DATE RECEIVED .....  
DATE SHIPPED .....

GE PACKAGED POWER, INC.

LM2500 Overhaul Report

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## CUSTOMER/TURBINE INFORMATION

CUSTOMER..... Maui Electric  
ENGINE MODEL..... LM2500  
ENGINE S/N ..... 481-637  
REASON FOR REMOVAL ..... Overhaul  
GEPPI WO#..... G22665W  
DATE RECEIVED ..... March 26, 1999  
DATE SHIPPED ..... August 25, 1999

Original and detailed records are on file and available for review upon request at our facility

Stewart & Stevenson Technical Services, Inc.

HPT Exchange

## CUSTOMER/HPT INFORMATION

CUSTOMER ..... *Maui Electric Co., Ltd.*  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABSL094  
HPT ROTOR S/N ..... SPKO5644  
STAGE 2 HPT NOZZLE S/N ..... GEVN8383  
SSTS SO# ..... G22215  
SSTS WO# ..... 802848

Stewart & Stevenson Technical Services, Inc.

HPT Exchange

## CUSTOMER/HPT INFORMATION

CA-IR-279  
DOCKET NO. 2006-0387  
EXHIBIT 3  
PAGE 5 OF 8

CUSTOMER ..... Maui Electric Co., Ltd.  
ENGINE MODEL ..... LM2500  
STAGE 1 HPT NOZZLE S/N ..... FABSL094  
HPT ROTOR S/N ..... SPKO5644  
STAGE 2 HPT NOZZLE S/N ..... GEVN8383  
SSTS SO# ..... G22215  
SSTS WO# ..... 802848

M-16  
HOT SECTION  
11-1997

M-16  
HOT SECTION REPORT  
1999

REPORT NOT FOUND

CA-IR-280

**Ref: MECO Response to CA-IR-85, part d (NOX Water).**

Please provide the following information:

- a. Explain the reasons why MECO intends to "retire the Osmonics system and replace it with a second EDI unit."
- b. Provide calculations of the annual operating expense impacts anticipated to result from retirement of Osmonics and addition of Ecell stacks in 2007.
- c. Provide complete copies of all business case studies or other economic analyses prepared by or relied upon by MECO to use EDI in place of the older demineralization technology (Osmonics and Glegg).
- d. Provide updated actual 2007 monthly expenses in the format of page 3 amounts by EE, for all available months to date.

**MECO Response:**

- a. MECO plans to retire the Osmonics mixed bed demineralizer because the system has been largely unreliable for the past several years. With the addition of M18 a dependable redundant back up system is required due to the increased water demand from the additional use of M17/19.
- b. MECO does not anticipate a change in annual operating expense from the Osmonics retirement and addition of E-cell "B" because the Osmonics demineralizer has barely operated in the last five years; therefore no calculations on annual operating expense impacts were done. As stated in CA-IR-85, MECO has been operating E-cell "A" as the primary water purification method since 2001. Going forward E-cell "A" and "B" will be cycled to meet the increased demand for demineralized water.
- c. A formal business case study was not performed, to the best of our knowledge. The Combustion Turbine Supervisor responsible for the transition to EDI technology is no longer

with MECO. The switch to EDI technology was done for reliability, environmental, and safety reasons.

- d. The updated actual 2007 monthly expenses for all available months to date are indicated in the table below:

**2007 actual monthly NOX water costs (\$) through July:**

<u>Act</u>	<u>RA</u>	<u>Loc</u>	<u>Ind</u>	<u>EE</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Total</u>	<u>NARUC</u>
875	MGC	MWT	NE	201	632	18,400	28,922	1,037	13,622	56	648	63,317	554
875	MGC	MWT	NE	205	15		10		42			67	554
875	MGC	MWT	NE	501	8,604	4,800			4,595	7,626		25,625	554
875	MGM	MWT	NE	201	1,010	2,296	4,621	3,318	6,620	15,870	4,289	38,024	546
TOTAL					10,261	25,496	33,553	4,354	24,879	23,553	4,936	127,034	



CA-IR-281

**Ref: MECO June 2007 Update T-5, page 1 and Attachment 3 (Materials Inventory).**

Please provide the following information:

- a. Explain all reasons why Maalaea inventory balances decline from \$6.72 million in April 2007 to \$6.43 million in May 2007.
- b. Explain why spare parts for M18 were included in MPP materials inventory and why such parts were reclassified on the books or in the forecast.
- c. State whether any adjustment to historical recorded MPP materials balances or rate case plant in service costs is needed to account for the spare parts reclassification.

**MECO Response:**

- a. The Maalaea inventory balance of \$6.72 million shown on the June 2007 Update T-5, page 2 of Attachment 3, is the recorded value for the month of April 2007. The inventory balance of \$6.43 million for the month of May 2007 is the forecast value. The recorded inventory balance for the month of May is \$6.85 million. The remaining months values were forecast based on the historical years 2004-2006 monthly average.
- b. As stated on MECO T-5, page 36, the spare parts for M18 were originally forecasted on our materials inventory. However, as stated on our June 2007 Update, T-5, the spare parts for M18 have not been included in materials inventory, but rather, are included in the capital costs for M18. The spare parts were included in the capital cost and not in our materials inventory, because the spare parts were purchased along with the unit as a bulk item. The spare parts for M18 are currently in our MPP warehouse, but do not have any dollar value on our materials inventory. Spare parts of M18 purchased in the future will be included in MPP materials inventory.

- c. Historical recorded MPP materials balances do not have to be adjusted to account for M18 spare parts being included in the capital cost of M18, since M18 spare parts were never included in the recorded MPP materials balances. Rate case plant in service costs also do not have to be adjusted as a result of spare parts being charged to M18 capital cost, since the plant in service cost for M18 included the spare parts.

CA-IR-282

**Ref: MECO Response to CA-IR-226, part b (KPP Structural Maintenance).**

Please provide the following:

- a. When did each of the KPP bulk fuel tanks last undergo an out-of-service inspection/repair and what was the cost of each such event?
- b. Has the KPP berm wall required substantial repairs in the last 10 years?
- c. If your response to part (b) is affirmative, please provide the dates and amounts of each such event.

**MECO Response:**

- a. As stated in MECO's response to CA-IR-100 and CA-IR-226, the last out-of-service inspection/repairs were performed on the KPP bulk fuel tanks in 1998 (Tank #1), 1999 (Tank #2) and 2000 (Tank #4).<sup>1</sup> The outside service costs for each of these events was \$203,584.33, \$220,997.67, and \$215,173.24 respectively.
- b. No, the KPP berm wall has not been substantially repaired in the last ten years.
- c. N/A.

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<sup>1</sup> There is no tank designated #3.

CA-IR-283

**Ref: MECO T-5, page 21 (Maintenance Work Requirements).**

According to the testimony, "Production maintenance labor expense was determined by estimating the work requirements and the staffing necessary to perform this work." Please provide the following:

- a. Explain in detail how "work requirements" were quantified, indicating each metric used for such quantification.
- b. Provide complete copies of all studies, reports, analyses, projections and other documents associated with or supportive of your response to part (a) of this information request.
- c. Provide detailed comparative historical data for the years 2002 through 2007, to date, indicating how MECO measures and tracks "work requirements" that are performed by company personnel within each RA.
- d. Provide test year work requirements metrics, comparable to your response to part (c), by RA.
- e. Explain why MECO-WP-505, at the line captioned "TOTAL MPP DIESEL ENGINE OVHL MAINTENANCE" projects a reduction of budgeted non-labor Diesel maintenance overhaul costs that reduces projected expenses from \$2.2 million to \$0.9 million, yet MECO has not reduced its MGD staffing or labor hours to reflect the reduced work requirements.
- f. Explain and quantify all reasons why the lower diesel operating hours described at MECO T-5, page 18, will not cause a corresponding reduction in MPP maintenance work requirements and labor hours.

**MECO Response:**

- a. Due to the complexity of all the different tasks for each and every job assignment, the Production maintenance "work requirements" are forecasted based on "labor demands". The "labor demands" are determined by the total hours available and the number of projected hours for overhaul, capital and general maintenance. The total hours available are calculated by adding the total supply hours for each labor class and the projected overtime hours. The total supply hours for each labor class are calculated based on the number of employee count multiplied by the available hours per employee for each labor class. The projected overtime hours are based on overtime hours required for each O&M project or "unit overhaul" and/or

historical experience. (See pages 3 and 4 of MECO's response to CA-IR-98. Copies provided in Attachment 2 of this response.)

The labor hours estimated for each overhaul are based on the historical standard overhaul labor hours by labor class and the time period scheduled for a standard unit overhaul, which is factored by the number of weeks for each standard overhaul schedule, the number of employee available for each labor class and number of working hours for each day. Then, the labor hours estimated for each capital projects are calculated by using the historical labor hours for the same or similar capital project. Lastly, the labor hours estimated for general maintenance or other O&M non-project or non-overhaul are calculated by subtracting total hours available from the number of hours projected for the overhaul and capital projects.

- b. Please refer to the following responses: 1) CA-IR-92, Attachment 3, page 1; 2) CA-93, Attachment 1, page 1, and; 3) CA-IR-94, Attachment 1, page 1. (Copies provided in Attachment 2 of this response.)
- c. Please refer to Attachment 1 of this response. As indicated on our response to item a. above, MECO Power Supply's measurement and tracking of the projected "work requirements" that are performed by company personnel within each RA are not done at the task level. However, to keep track of the actual hours recorded for a certain work, MECO Power Supply creates a work order for every standard job or work which requires MECO labor hours. The creation of the work order allows us not just to keep track of the actual hours spent on a work associated to an overhaul, corrective, preventive and predictive maintenance, but as well as the actual costs incurred for non-labor expenses, such as materials and outside services.
- d. Please refer to response to item c.
- e. Please refer to CA-IR-222 items a. and b.
- f. Please refer to CA-IR-222 item c.

Maui Electric Company, Limited

**PRODUCTION LABOR HOURS - OVERHAUL, CAPITAL AND O&M  
2002 - 2006 RECORDED, 2007 RECORDED TO DATE, 2007 BUDGET**

Line	RA	Acct Grp Descr	(A)	(B)	(C)	(D)	(E)	(F)	(G)
			RECORDED					YTD June	TEST YEAR
			2002	2003	2004	2005	2006	2007	
1	MGA	Overhaul	39	154	0	22	0	0	0
2	MGA	Capital	458	820	828	1,105	1,055	320	412
3	MGA	General Maintenance	16,279	13,218	14,161	14,454	14,895	7,672	14,119
4	MGA	Total	16,775	14,191	14,989	15,581	15,950	7,991	14,531
5	MGB	Overhaul	2,969	6,823	6,009	6,058	2,735	61	8,173
6	MGB	Capital	977	1,160	1,247	284	256	123	1,053
7	MGB	General Maintenance	12,671	10,369	11,204	11,824	14,915	9,067	11,180
8	MGB		16,617	18,353	18,459	18,166	17,905	9,251	20,406
9	MGC	Overhaul	0	439	321	437	1,054	638	954
10	MGC	Capital	0	90	14	53	37	105	280
11	MGC	General Maintenance	41	5,324	4,627	5,872	5,342	2,850	4,958
12	MGC		41	5,853	4,962	6,362	6,433	3,592	6,192
13	MGD	Overhaul	25,209	23,059	20,779	18,320	15,643	16,406	37,395
14	MGD	Capital	43	112	94	21	167	76	248
15	MGD	General Maintenance	22,830	18,433	21,935	20,530	22,390	6,972	4,311
16	MGD		48,082	41,604	42,807	38,870	38,200	23,453	41,954
17	MGE	Overhaul	6,459	8,831	8,546	8,182	6,397	2,665	12,575
18	MGE	Capital	1,124	997	2,898	1,607	1,512	598	1,270
19	MGE	General Maintenance	10,892	10,240	12,024	14,905	15,313	8,177	11,845
20	MGE		18,475	20,069	23,468	24,693	23,221	11,440	25,690
21	MGK	Overhaul	566	1,103	989	888	577	0	2,085
22	MGK	Capital	0	52	160	-2	0	0	0
23	MGK	General Maintenance	41,088	43,146	42,021	43,735	43,837	24,036	41,225
24	MGK		41,654	44,302	43,170	44,621	44,414	24,036	43,310
25	MGL	Overhaul	0	0	52	0	66	0	0
26	MGL	Capital	0	0	0	0	0	0	0
27	MGL	General Maintenance	12,283	10,777	10,591	10,647	10,403	5,594	12,528
28	MGL		12,283	10,777	10,643	10,647	10,469	5,594	12,528
29	MGM	Overhaul	83	124	102	20	27	0	0
30	MGM	Capital	0	36	12	8	423	68	0
31	MGM	General Maintenance	60,064	61,767	59,098	59,532	59,517	28,154	59,311
32	MGM		60,147	61,927	59,212	59,560	59,967	28,223	59,311

Maui Electric Company, Limited

**PRODUCTION LABOR HOURS - OVERHAUL, CAPITAL AND O&M  
2002 - 2006 RECORDED, 2007 RECORDED TO DATE, 2007 BUDGET**

<u>Line</u>	<u>RA</u>	<u>Acct Grp</u>	<u>Descr</u>	(A)	(B)	(C)	(D)	(E)	(F)	(G)
				RECORDED					YTD June	TEST YEAR
				<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2007</u>
33	MGT	Overhaul		32	0	331	0	0	0	426
34	MGT	Capital		0	205	816	859	678	267	127
35	MGT	General Maintenance		12,776	13,143	12,429	12,895	13,257	6,642	12,440
36	MGT			12,808	13,348	13,575	13,754	13,935	6,909	12,993
37	Production	Overhaul		35,356	40,533	37,127	33,925	26,498	19,770	61,608
38	Production	Capital		2,600	3,472	6,067	3,935	4,127	1,556	3,390
39	Production	General Maintenance		188,924	186,418	188,089	194,393	199,868	99,162	171,917
40	Production	Total		226,880	230,422	231,283	232,253	230,492	120,488	236,914

3. Yes, available labor hours for the assumed staffing level were converted into available hours, overtime as well as estimated amounts of non-productive holiday, vacation and sick pay.
  4. Yes, available operator and administrative hours are generally across activity codes, based upon historical distribution of such hours.
  5. Yes, total maintenance hours are compared to overhaul schedules and any hours not required for overhauls would be used for general plant maintenance.
  6. Yes, if overhaul schedules cannot be met with internal resources, there may be a need to defer general maintenance, utilize contractors or take a risk with deferring an overhaul.
  7. Yes, backlogged non-project plant maintenance work would be done during a scheduled overhaul, maintenance outage and in some cases does not require and outage.
  8. Yes, there are capital projects where staff can charge to capital accounts.
- b. Separate labor hour data for straight-time capital, straight time O&M, overtime capital and overtime O&M cannot be produced because labor costing is performed with the use of standard labor rates, which allocate overtime and other premium pay across all productive labor hours. However, in an effort to provide information to facilitate the Consumer Advocate's review of MECO's rate case, a comparative summary of total hours worked for each RA, broken down between capital and O&M for the years 2004 through 2006 for recorded data and the 2007 Operating Budget, is



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provided in Attachment 1. In addition, Attachment 2 provides a summary of actual incurred straight time and overtime labor hours for each RA labor category for calendar years 2004, 2005 and 2006, as well as the comparable labor hour data included in the Production's 2007 test year rate case forecast. This summary includes total labor hours, not labor hours allocated between O&M, capital and other accounts. Please note that page 3 of Attachment 2 does not tie to MECO-WP-1106 (pages 3 and 4) as there was an error in calculating the straight time and overtime hours in 2007 forecast; a corrected MECO-WP-1106 will be filed at a later date. A summary of total hours worked for each RA, relating to total compensated absence hours (holiday, vacation and sick) is not included, however, the information requested will be provided when the data becomes available. There are no any additional categories of labor hours required to equal total paid hours.

**GDMANT (18)**

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	TOTAL 2007
	Overhaul hours	2,688	3,168	4,096	3,552	1,693	1,655	3,488	2,976	3,192	3,454	3,285	3,541	36788
	General Maint hours	460	112	224	5	630	1,014	148	147	47	0	0	0	2783.5
	Capital	40	40	4	4	0	0	0	0	0	160	0	0	248
	Total	3,188	3,320	4,324	3,561	2,323	2,669	3,636	3,123	3,239	3,614	3,285	3,541	39819.5
														0
	Supply	3312	2880	3168	3024	3312	3024	3168	3312	2880	3312	3168	3024	37584
	OT	384	608	1280	992	157.5	462.5	672	512	512	512	384	640	7116
	Total Hrs Avail	3696	3488	4448	4016	3469.5	3486.5	3840	3824	3392	3824	3552	3664	44700

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	TOTAL 2007
	GDSUPV (1) Mike Abbey													
	Overhaul hours	42	64	78	72	15	48	52	44	48	48	46	50	607
	General Maint hours	166	128	168	158	174	125	156	172	144	168	154	158	1,871
	Capital	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	208	192	246	230	189	173	208	216	192	216	200	208	2478
														0
	Supply	184	160	176	168	184	168	176	184	160	184	176	168	2088
	OT	24	32	70	62	5	5	32	32	32	32	24	40	390
	Total Hrs Avail	208	192	246	230	189	173	208	216	192	216	200	208	2478

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	TOTAL 2007
	GDMATL (Eileen)													
	Overhaul hours	0	0	0	0	0	0	0	0	0	0	0	0	0
	General Maint hours	196	176	211	199	187	170	192	200	176	200	188	188	2283
	Ellipse	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	196	176	211	199	187	170	192	200	176	200	188	188	2283
														0
	Supply	184	160	176	168	184	168	176	184	160	184	176	168	2088
	OT	12	16	35	31	3	2	16	16	16	16	12	20	195
	Total Hrs Avail	196	176	211	199	187	170	192	200	176	200	188	188	2283

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	TOTAL 2007
	GDMATL (Shamus)													
	Overhaul hours	0	0	0	0	0	0	0	0	0	0	0	0	0
	General Maint hours	196	176	211	199	186	171	192	200	176	200	188	188	2283
	Capital	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	196	176	211	199	186	171	192	200	176	200	188	188	2283
														0
	Supply	184	160	176	168	184	168	176	184	160	184	176	168	2088
	OT	12	16	35	31	2	3	16	16	16	16	12	20	195
	Total Hrs Avail	196	176	211	199	186	171	192	200	176	200	188	188	2283

## GEMANT (10)

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Total 2007
Overhauls	GEMANT	1530	1368	672	625	1387	1637	432	1184	584	584	1335	765	12,103
Capital		160	160	136	88	160	80	24	0	240	96	0	0	1,144
General Maintenance		451	373	1253	1,268	594	264	1605	957	1077	1461	726	1216	11,245
Total		2,141	1,901	2,061	1,981	2,141	1,981	2,061	2,141	1,901	2,141	2,061	1,981	24,492
Available		1840	1600	1760	1680	1840	1680	1760	1840	1600	1840	1760	1680	20880
OT		301	301	301	301	301	301	301	301	301	301	301	301	3,612
Total Avail		2,141	1,901	2,061	1,981	2,141	1,981	2,061	2,141	1,901	2,141	2,061	1,981	24,492

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Total 2007
Overhauls	GESUPV (Gerardo)	40	48	40	32	45	67	28	46	27	27	36	36	472
Capital	GESUPV	40	0	0	10	10	10	0	0	40	16	0	0	126
General Maintenance		130	138	162	152	155	117	174	164	119	167	166	158	1802
Total		210	186	202	194	210	194	202	210	186	210	202	194	2400
Available		184	160	176	168	184	168	176	184	160	184	176	168	2088
OT		26	26	26	26	26	26	26	26	26	26	26	26	312
Total Avail		210	186	202	194	210	194	202	210	186	210	202	194	2400

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Total 2007
Overhauls	GEMANT (Extra person)	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital	GESUPV	0	0	0	0	0	0	0	0	0	0	0	0	0
General Maintenance		184	160	176	168	184	168	176	184	160	184	176	168	2088
Total		184	160	176	168	184	168	176	184	160	184	176	168	2088
Available		184	160	176	168	184	168	176	184	160	184	176	168	2088
OT		0	0	0	0	0	0	0	0	0	0	0	0	0
Total Avail		184	160	176	168	184	168	176	184	160	184	176	168	2088

Total 2007 for MGE = 28,980

7 men (GBMANT)

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Overhaul	Hours	977	577	128	128	1431	123	0	1120	840	280	1,110	833	7547
Capital	Hours	4	116	32	0	0	80	400	0	8	0	333	0	973
<b>General Maint</b>		<b>555.5</b>	<b>612.5</b>	<b>1200</b>	<b>1176</b>	<b>224.5</b>	<b>1039.5</b>	<b>844</b>	<b>180</b>	<b>284</b>	<b>1020</b>	<b>58.5</b>	<b>616</b>	<b>7810.5</b>
														0
Total Hrs		1536.5	1305.5	1360	1304	1655.5	1242.5	1244	1300	1132	1300	1501.5	1449	16330.5
Available		1288	1120	1232	1176	1288	1176	1232	1288	1120	1288	1232	1176	14616
OT		248.5	185.5	128	128	367.5	66.5	12	12	12	12	269.5	273	1714.5
<b>Total Hrs Avail</b>		<b>1536.5</b>	<b>1305.5</b>	<b>1360</b>	<b>1304</b>	<b>1655.5</b>	<b>1242.5</b>	<b>1244</b>	<b>1300</b>	<b>1132</b>	<b>1300</b>	<b>1501.5</b>	<b>1449</b>	<b>16330.5</b>

GBSUPV

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Overhauls	Hours	84	50	0	0	122	11	0	96	72	24	96	71	626
Capital	Hours	0	40	16	0	0	0	24	0	0	0	0	0	80
<b>General Maint</b>		<b>135.5</b>	<b>96.5</b>	<b>166</b>	<b>174</b>	<b>115</b>	<b>166.5</b>	<b>158</b>	<b>94</b>	<b>94</b>	<b>166</b>	<b>118.5</b>	<b>136</b>	<b>1620</b>
														0
Total Hrs		219.5	186.5	182	174	237	177.5	182	190	166	190	214.5	207	2326
Available		184	160	176	168	184	168	176	184	160	184	176	168	2088
OT		35.5	26.5	6	6	52.5	9.5	6	6	6	6	38.5	39	237.5
<b>Total Hrs Avail</b>		<b>219.5</b>	<b>186.5</b>	<b>182</b>	<b>174</b>	<b>236.5</b>	<b>177.5</b>	<b>182</b>	<b>190</b>	<b>166</b>	<b>190</b>	<b>214.5</b>	<b>207</b>	<b>2325.5</b>

GBMATL

*RA #	*Labor Class #	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Overhauls	Hours	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital	Hours	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>General Maint</b>		<b>219.5</b>	<b>186.5</b>	<b>176</b>	<b>168</b>	<b>237</b>	<b>177.5</b>	<b>176</b>	<b>184</b>	<b>160</b>	<b>184</b>	<b>214.5</b>	<b>207</b>	<b>2290</b>
														0
Total Hrs		219.5	186.5	176	168	237	177.5	176	184	160	184	214.5	207	2290
Available		184	160	176	168	184	168	176	184	160	184	176	168	2088
OT		35.5	26.5	0	0	52.5	9.5	0	0	0	0	38.5	39	201.5
<b>Total Hrs Avail</b>		<b>219.5</b>	<b>186.5</b>	<b>176</b>	<b>168</b>	<b>236.5</b>	<b>177.5</b>	<b>176</b>	<b>184</b>	<b>160</b>	<b>184</b>	<b>214.5</b>	<b>207</b>	<b>2289.5</b>

Note: Added in an extra GBMANT personnel per Stan Kiyonaga on 07/10/06; available hours for this additional employee not accounted for on this calculation.

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CA-IR-284

**Ref: MECO response to CA-IR-232 (T&D Staffing).**

Part (c) of CA-IR-232 asked why MECO believed it was appropriate for the T&D 2007 test year forecast to assume full staffing of 111 employees throughout the year when the Company had not yet achieved that level as of June 8, 2007. In response, MECO stated, in part: "...Since this rate case will establish rates beyond the 2007 test year, it is reasonable that these rates be set at a level that takes into consideration full staffing, which will be achieved in 2007 and carried forward into 2008 and beyond." Please provide the following:

- a. Does MECO believe that the test year forecast should reflect customer counts and sales volumes that may be achievable by 12/31/07 and carried forward into 2008 and beyond? Please explain.
- b. Does MECO believe that the test year forecast should be reduced to recognize that certain expenses expected to be incurred in 2007 will not be recurring into 2008 and beyond (e.g., nonrecurring software licensing costs)? Please explain.

**MECO Response:**

- a. No, MECO does not believe that the test year forecast should reflect customer counts and sales volumes that may be achievable by 12/31/07 and carried forward into 2008 and beyond. MECO believes that full T&D staffing is appropriate for the test year because while T&D staffing is not currently at 111 employees, the reduced staffing is being offset by the Company incurring more overtime than was forecasted for the test year. Year to date June 2007 T&D overtime is at 29,710 hours compared to a June 2007 test year budget of 9,175 hours.
- b. No, MECO does not believe that the test year forecast should be reduced to recognize that certain expenses expected to be incurred in 2007 will not be recurring into 2008 and beyond (e.g., nonrecurring software licensing costs). MECO believes that the test year should reflect a normalized level of expenses that MECO will experience in the test year. MECO believes that if certain expenses that are expected to be incurred in 2007 that will not be recurring into 2008 and beyond are replaced by similar expenses in subsequent years then the test year level of expense which includes the specific 2007 expenses is appropriate.